GROWTH MANAGEMENT AND DIRECT DEMOCRACY

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Studies on policy adoption have hypothesized that growth management policies are adopted in response to growth and community socioeconomic status and under state intervention. However, mixed results from empirical studies suggest that varying political processes behind policy adoption may translate similar local status into different policies.

This study focuses on the issue of the influence of direct democracy on local residential growth management. Unlike representative democracy, direct democracy allows local residents to participate directly in the decision-making process to adopt or defeat growth management measures. Three forms of direct democracy—town meeting, initiative, and referendum—are particularly examined along with direct democracy in general. This study hypothesizes that direct democracy contributes to a more restrictive, exclusionary, and less management-oriented growth management framework.

To test these hypotheses, this study uses a mixed-method approach combining quantitative multivariate analyses with two case studies. The quantitative analyses utilize two nationwide surveys—a survey of local land-use regulations conducted in 2003 and a survey of local access to direct democracy conducted in 2006. Census data from 1990 and 2000 are also included to characterize community status and growth characteristics. The case studies further examine the interaction between direct democracy and growth management through two cases in

Massachusetts—the Town of Westford and the Town of Chelmsford. Findings from quantitative analyses have served as criteria for case selection.

This study demonstrates that direct democracy has a limited effect on growth management policies and this effect is related to specific forms of direct democracy and geographic areas. While town meeting in New England region is associated with stringent growth policies, initiative and referendum do not show connections to policy restrictiveness. Direct democracy also works in a limited manner with socioeconomic status to further influence growth policies. In addition, the study reveals that direct democracy has a connection to growth policies that have exclusionary potential, and that direct democracy is related to less management-oriented growth management efforts. The town meeting case studies further indicate that growth management emergence is a dynamic result of interaction between growth and resident groups under the filtration of town meeting.

Biographical Sketch

Dehui Wei was born to Suyun Tan and Jingsen Wei in a historic small town, Beizhen, in Liaoning Province in 1971. He matriculated at Tsinghua University in Beijing where he received a bachelor's degree in Architecture in 1994 and a master's degree in Building Science in 1997. After working for a few years in a design firm, he came to the US and matriculated at SUNY Albany, where he received a master in Regional Planning. After that, he came to Cornell University to pursue his doctoral studies in the Department of City and Regional Planning. Here, he has focused on a regulatory approach to planning because he believes that physical design alone, no matter how creative, cannot ensure planning's effectiveness and advancement to a higher quality of life.

To my parents

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Chapter 1. Introduction

Since the first zoning ordinance appeared in New York City in 1916, numerous communities in the United States have adopted and implemented different types of land-use regulations to control land development. Regulating private land development is often carried out in the name of public interest in order to achieve and maintain development integrity, land-use compatibility, and desirable community character. Given that local land-use regulations and policies inevitably affect private property values and create winners and losers in the land market, the legitimacy of land-use regulations have withstood legal challenges and persistent attacks from the private property rights movement.

Since the early 1970s, because of the heightened awareness of the externalities associated with land development in environmental, fiscal, and social regards, actions to control or manage local land development have proliferated and become more innovative, especially in several fast-growing areas of the country. Under the rubric of "growth management," communities are assuming a more proactive stance and attempting to control urban growth in a more systematic fashion. The goals of growth-management advocates have been expanded to include reducing public sector costs of providing infrastructure and services; promoting compact growth; managing traffic levels; preserving farmlands; and using other means to improve the overall quality of life for communities.

The efficacy of land-use policies has been constantly challenged in the form of two questions: first, whether the policies have brought about desired outcomes; and second, whether the policies have led to unanticipated and often adverse consequences. Advocates for strong policy measures argue that land-use measures have helped protect the environment, preserve desirable community attributes, and assure orderly, fiscally-responsible development. Their critics retort that such

measures are ineffective in attaining their stated objectives and, more often than not, are both inflationary and exclusionary at the expense of newcomers, especially the less affluent. Thus far, there is little available evidence to provide a conclusive answer to either proposition.

The absence of causal connections between growth policies and their results has led some scholars to speculate that the motivations behind those policies may have been incoherent. Essentially, in order to construct a better evaluation of policies' effectiveness and real outcomes, researchers need to understand who is involved in making the policy, under what circumstances policies are adopted, and how policies are adopted. Such understanding is also necessary to make effective policy changes and to avoid public resistance to the resulting policies.

This dissertation makes a contribution to the study of the factors and issues involved in the policy adoption process. It focuses on an understudied factor—direct democracy—and improves our understanding of the role played by three types of direct democracy tools—initiative, referendum, and town meeting—in shaping local growth-management policies. To the degree that policy outcomes are the aggregation of individual policy preferences, it is reasonable to expect that direct democracy, which affects how public preferences are aggregated, could influence policy outcome (Gerber, 1991).

To date, policy adoption studies have generally focused on residents' socioeconomic status and growth-related conditions in explaining policy variation. Available studies about the relationship between direct democracy and policies have often been limited to theoretical discussion of the structural defects in policy making. A few empirical studies concerning direct democracy examine only its effects on state policies, or consider only a limited area and a single local land-use policy such as urban growth boundaries. More comprehensive and systematic research is needed.

A better understanding of direct democracy's effects on growth policies is also of academic concern because of its significance to planning practice. Planning relies on public participation to ensure accountable and responsible land-use decisions and to make policies more effective. However, direct democracy, an ultimate form of public participation, has put planning in an awkward position. While direct democracy has been used in the development and adoption of local growth-management policies, many policies adopted through direct democracy have been considered unrepresentative and even exclusionary.

Policy adoption through direct democracy is sometimes criticized as being based in over-reactive, over-simplified reasoning and its being used by interest groups to further their own interests. These criticisms are founded in the structural defects in the implementation or practice of direct democracy. Understanding this perspective can potentially lessen the perceived tension between two conflicting values concerning the use of direct democracy, thus encouraging public participation and promoting a diverse community outcome.

The goal of this study is to examine the relationship between direct democracy and local residential growth-management policies. By comparison with past research that has examined the characteristics of policies adopted by means of direct democracy, this study looks at policy variation in local land-use planning across communities in the context of the availability of direct democracy. I contend that the availability of direct democracy not only provides a tool that can be used directly by the electorate, but also serves to influence elected officials in their policy making as well. In other words, access to direct democracy tools in a community may shape policy outcome, regardless of whether or not the tools have been used to adopt policies.

This dissertation is guided by two hypotheses:

1. Communities with access to direct democracy have a higher level of overall restrictiveness in their growth-management efforts.
2. Communities with access to direct democracy are more likely to have growth-management measures that have exclusionary potential and to have growth-management measures that have a growth-control rather than a growth-management orientation.

To test these hypotheses, I designed a mixed-method approach by combining quantitative multivariate analyses with a series of case studies. The quantitative analyses are based on two surveys: the first survey is a nationwide local land-use regulation survey conducted by Pendall and associates in 2003; while the second is a nationwide survey about local access to direct democracy conducted by the author in early 2006. I also used census data (Census 2000 and Census 1990) to characterize community socio-demographic status and growth characteristics. Both logit regression and logistic regression models are applied. Two cases in Massachusetts—the Town of Westford and the Town of Chelmsford—are selected for the purpose of further examining the interaction between direct democracy and growth management. The findings from quantitative analyses are utilized as case selection criteria.

This study demonstrates that direct democracy has a limited effect on growth management policies and this effect is related to specific forms of direct democracy and geographic areas. While town meeting in New England region is associated with stringent growth policies, initiative and referendum do not show connections to policy restrictiveness. Direct democracy also works in a limited manner with socioeconomic status to further influence growth policies. In addition, the study reveals that direct democracy has a connection to growth policies that have exclusionary potential, and that direct democracy is related to less management-oriented growth

management efforts. The town meeting case studies further indicate that growth management emergence is a dynamic result of interaction between growth and resident groups under the filtration of town meeting.

This dissertation is structured as follows: Chapter 2 provides a background for this research by first reviewing the history of land-use planning and the evolution of growth management in the US and then introducing urban and suburban politics. Chapter 2 includes a review of the literature regarding policy adoption and a description of ballot box planning. Chapter 3 outlines a conceptual framework and introduces research questions and hypotheses. Chapter 4 describes the research design and methodology, while Chapter 5 discusses quantitative analysis findings. Chapter 6 is focused on case study findings, and Chapter 7 contains the dissertation's conclusion and discussion.

Chapter 2. Literature Review

2.1 Overview of Local Growth Management Policies

2.1.1 History of Land-use Regulations

Local governments have long used a variety of approaches to regulate the use of land. However, in its early history, urban development was more often a haphazard and incremental event than a deliberately planned process. Some early planned communities were basically duplicates of European traditional towns and villages (Reps, 1965). Following several influential movements in the nineteenth century, such as the Sanitary Reform Movement, the City Beautiful Movement and later Howard's Garden City concept, Americans realized that cities must be planned—and planned comprehensively. Gradually, during that period, urban planning began to be influenced by the newly formalized disciplines of architecture and civil engineering, which began to codify both rational and stylistic approaches to solving city problems by means of physical design and planning (Hoch, Dalton, and So, 2000).

Since the beginning of the twentieth century, zoning ordinances, general plans, subdivision controls, and building codes have been the accepted methods of guiding growth. Over time, these devices have become more comprehensive and complex as additional concerns, such as transportation and public utilities, were recognized as inextricably related to land development, and as additional issues, such as design quality and landscaping, were accepted as legitimate bases for public action (Deakin, 1989).

Emerging with modern physical design planning were zoning ordinances and subdivision regulations. In 1916, New York City adopted the first zoning regulations to apply city-wide to prevent new development from interfering with existing buildings (Bassett, 1929; Fischel, 1987). By the late 1920s, most US communities had developed a set of zoning and subdivision

regulations, thanks to the Standard State Zoning Enabling Act of 1926.[1] While zoning has since been criticized for its rigidness and institutionalization of outdated planning theories (Kunstler, 1998), today's zoning has evolved into a variety of more flexible categories, such as performance zoning and incentive zoning (DeGrove, 1991).

Zoning ordinances control the type and intensity of land use in specified geographic districts. The popularity of these regulations come from their relative effectiveness, ease of implementation, long-established legal precedent, and their familiarity to planners and design professionals (Fischel, 1987). Even though the appearance of zoning in New York City was motivated by a land-use dispute, other municipalities' later adoption of zoning was determined and limited by state legislative authorities through enabling legislation. To a certain extent, provisions on zoning ordinance, with comprehensive plan and subdivision regulation, helped predict development directions for property owners, exclude incompatible land uses and protect local budgets.

Comprehensive planning appeared after the Standard City Planning Enabling Act in 1928. Since the 1950s, comprehensive planning has reached a new phase. The Housing Act of 1954 started the urban renewal movement. Its section 701 required that local government had to prepare a comprehensive plan in order to qualify for urban renewal grants (Hoben, 2001; Jackson, 1985). As a result, local municipalities treated comprehensive plans as a routine part of their responsibilities. Since then, the planning profession has entered its golden age—both the number of planning graduates and the number of planning jobs boomed; this period saw the greatest expansion of operational power on the part of urban planners.

[1] However, zoning's legal stand was established by the famous Euclid case. In 1926, the US Supreme Court upheld local zoning in *Euclid vs. Ambler*, giving its seal of approval to local zoning ordinance.

Among comprehensive plan elements such as land use, transportation, and housing, capital improvement programs have always been a highlight since the middle of the last century. A capital improvement program is a blueprint for planning a community's capital expenditures and is one of the most important responsibilities of local government officials. It coordinates community planning, financial capacity and physical development. These programs objectivelly prepared for the rapid suburban development after WWII.

Comprehensive planning has a close tie with zoning. These plans are a community's "vision," while the zoning ordinance contains the rules that govern the path to that vision or, in other words, the zoning ordinance makes up part of the plan's implementation process. Many states require that the zoning ordinance be compatible to the plan; in such cases, the plan forms the basis upon which zoning decisions are made.

With the rapid growth of the 1950s and 1960s, the pressures on municipal budgets mounted and local public infrastructure were inadequate to support rapid rates of growth. A number of communities began to search for additional means of regulating development (Burrows, 1978), partially motivated by a number of broad critiques of the rational planning model that had gained momentum after the 1960s. Such models, including those of Jane Jacobs, helped to expand the domain of urban planning to include economic development, community social planning and environmental planning. Concerns over the effects of growth were particularly at issue in cases where local governments found that demands for public infrastructure and services were outstripping their budgets for such items and outpacing the ability to deliver them even with tax increases. New techniques adopted at that time included altered subdivision requirements and zoning regulations, expanding requirements for developers to provide public facilities, capital programming, and the timing of development approvals.

In the 1970s, concerns about urban sprawl, air pollution, loss of open space and farmlands, and energy profligacy came to dominate the public agenda. Another round of land-use regulations emerged, including restrictions on annexations and the establishment of urban limit lines, greenbelts and agricultural preserves. Impact assessments were increasingly used as the basis for more extensive developer exactions and impact fees. In some communities, debates erupted over the effects of rapid population increases, and caps were established on the number of housing units that could be authorized annually. A few places even established overall population maximums.

Planned unit development (PUD) had also emerged in the 1960s and 1970s as a standard model for suburban residential development. PUD is a means of land regulation, which promotes large scale and unified land development. It allows flexibility in the design of a subdivision by setting an overall density limit for the entire subdivision as well as allowing the dwelling units to be clustered to provide for common open space. This pattern fulfilled the rapid increase in housing demand after WWII because it provided an efficient and affordable way of housing production[2] and at the same time showed the potential for improving the quality of the living environment by providing large common spaces and public amenities. PUD also helped with the protection of environmental amenities and the creation of variety in the built environment. However, some early PUD developments, such as Levittown, New York, were criticized for their blandness and racial exclusivity[3] (Hales, 2004).

[2] With the full implementation of federal government supports for housing, administered under the Federal Housing Administration (FHA), many developers were able to offer homebuyers a 30-year mortgage with no down payment and monthly costs about the same as rentals.

[3] From the first, the Levittown development was racially segregated; a "covenant" in the original rental agreement, which migrated to the sales agreement, stipulated that houses could not be rented or sold to any but members of the "Caucasian" race. This covenant conformed to federal requirements that developers using FHA funding had to maintain the "racial homogeneity" of their developments. Only after the 1954 racial integration decisions was Levittown racially integrated, and even as late as the 1960 census only a tiny fraction of the community was non-white (Hales, 2004).

Since 1970, some states have begun to step into the planning field. Thirteen states have initiated statewide growth management programs; however, the intergovernmental structures and development goals of such programs vary substantially (Bollens, 1992; Gale, 1992). Many of these state and non-local growth management strategies seek to restrict growth with regionally detrimental effects, while a growing number also seek to facilitate regionally beneficial growth, which is often opposed by local governments. The evolution of state policies has shown a shift from state preemptive regulatory intervention to conjoint and cooperative state-local planning frameworks and the incorporation of growth-accommodating economic policies into programs previously environmentally oriented. This shift is often referred to as planning's quiet revolution (Bosselman and Callies, 1972) and later as the second and third waves of state growth management programs (Weitz, 1999).

Oregon is one of the pioneers of state planning. Under its 1973 statewide planning act, Oregon mandates that its localities adopt an "urban growth boundary" to classify land according to growth management policy (Abbott, Howe and Adler, 1994). In recent years, several other states such as California, Florida, Georgia, Hawaii, Maine, Maryland, New Jersey, Oregon, Rhode Island, Vermont and Washington have adopted statewide land-use planning policies in order to contain urban sprawl either directly or indirectly (Bollens, 1992; DeGrove, 1984, 1992; Gale, 1992; Innes, 1992; Leonard, 1983; Pendall, 2001).

In the late 1960s through the 1980s, concerns about the fiscal impacts on local budget had become a constant theme. Mid-sized to large projects were required to conduct fiscal impact analyses, and all land-use regulations had to match local fiscal objectives. In some localities, control on the pace of growth has also been introduced to manage fiscal impacts and smooth out

such impacts on communities. Another tool, greenbelt, was also invented to control infrastructure costs in addition to protecting open space.

Over time, other issues motivated an increasing number of growth management measures. The first was in regard to traffic congestion. Trip generation rates were closely scrutinized, and heavy traffic generators often met with community opposition. Controls over the amount of commercial space that could be approved, once an issue only occasionally arising in the context of a specific development proposal, appeared as general policies in several jurisdictions during the mid-1980s. The second was on fair shares of affordable housing in local jurisdictions. The Mount Laurel I (1975) and II (1983) decisions by the New Jersey Supreme Court established that municipalities were constitutionally mandated to provide low- and moderate-income housing, mainly through their zoning powers (Hughes and Vadoren, 1990).

Beginning in the late 1990s, smart growth became popular. The term first appeared in Maryland's Smart Growth Priority Funding Areas Act of 1997. This act addresses important issues of growth management through five components: local funding; infill development; jobs-housing balance; economic development; and rural land conservation. Along with specific pieces of legislation that address each of these components, the state also adopted four goals and ten principles of smart growth.[4] To encourage the implementation of these guidelines, the PFA Act designates specific areas that are eligible for state funding if the plans and approved development projects of local governments meet the objectives of these goals and principles. Projects covered by the PFA act include highways, sewer and water construction, housing improvement, economic development assistance, and state leases or the construction of new office facilities. In addition to these state infrastructure subsidies, the Smart Growth legislation also encourages the

[4] For a detailed description, visit the Maryland Department of Planning website at: http://www.mdp.state.md.us/smartintro.htm.

use of density bonuses for developers who build a percentage of housing units at or below market rate.

Today, a wide range of growth management measures is in use, sometimes under broader labels of livability or sustainability (Goldschalk, 2004). They are an accumulation of traditional, environmental, fiscal and capacity-related regulations that remain extremely active among regional policy analysts and smart growth boosters (Baldassare, 2001). Their objectives are to reduce public sector costs of providing infrastructure and services, to promote compact growth, to manage traffic levels, to preserve farmlands as well as other means to improve the overall quality of life for community residents. While advocates argue that growth management measures help to protect the environment, preserve desirable community attributes, and assure orderly, fiscally responsible development, critics retort that these measures are inflationary, exclusionary and ineffective in attaining their stated objectives and, more often than not, are motivated by the desire of existing residents for self-enrichment at the expense of newcomers, especially those who are less affluent (Deakin, 1989).

2.1.2 Definition of Growth Management

There is no standard definition for growth management[5]. Godschalk and Brower (Godschalk, Brower and McBennett, 1979; Brower et al., 1984) call it a conscious government program to influence the rate, amount, type, location and/or cost of development. DeGrove (1989) gives it a broader content. The definition of the term "growth management" ranges from the assumption

[5] In the 1970s there were terms used including "growth control," "slow growth," and even "no growth." Regulations under these terms aimed at limiting the amount and/or flow of development well below market levels. The term "growth management" came in later to reflect an effort to guide or mitigate the effects of growth rather than to tightly control growth. In practice, however, the distinction between growth control and growth management is much less clear. As Glickfeld and Levine (1992) first observed, most California jurisdictions employ multiple approaches, often mixing growth control and growth management programs.. In this study, all these terms are pooled together and labeled "growth management." Meanwhile, such terms as growth management, growth management programs, growth management techniques, growth management measures and growth management policies are used interchangeably in this study.

that it always and everywhere means a citizen-led effort to stop growth absolutely in a particular place to more balanced definitions focusing on the need to plan rationally to accommodate the impacts of growth that are likely to occur whether or not the it is managed so as to balance the needs of the environment with those of development.

Summarizing from the literature, I provide a tentative definition for growth management: Growth management refers to a set of policies designed, under the comprehensive planning framework, to control or guide the type, location, timing, quality, scale, rate and/or sequence of growth and pursue economically efficient, socially integrated and environmentally sustainable development.

However, the term "growth management" can mean both everything and nothing. Depending on one's perspective, growth management is either a panacea or a hollow promise. Those communities that have successfully employed growth management techniques view it as everything they always wanted, but never got, from traditional comprehensive planning programs. Those who have only initiated growth management strategies after much of the damage has been done may view it as a remedial measure at best (Nelson and Duncan, 1995).

2.1.3 The Policy Goal of Growth Management

Localities usually combine several growth management tools into a multi-layered policy composite. It can be viewed as part of a larger effort—the comprehensive plan—to shape the desired community of tomorrow and based on a vision of the future that recognizes global resource limits and our responsibilities to sustainability issues. More specifically, the purposes of growth management are related to the prevention of urban sprawl, the pursuit of efficient urban form, public intervention into the land market, and taxpayer protection.

Growth management seeks balanced and efficient development patterns. Many growth management techniques can be traced back originally to regulatory responses to the problems and processes associated with urban sprawl[6] (Nelson and Duncan, 1995) and to achieve more efficient urban development patterns. The more efficient an urban development plan is, the greater the wealth of the community, as scarce resources will not be wasted. The goals of efficient urban patterns include the following: (1) achieving a job-housing balance; (2) integrating socioeconomic classes, as both low- and high-income workers often work in the same place; (3) reducing the need for expansion of transportation capacity; (4) enhancing redevelopment; (5) minimizing environmental pollution; (6) preventing costly or conflicting land-use patterns; and (7) minimizing public facility costs.

Gradually, growth management has also dedicated itself as a public intervention into an otherwise unregulated land market,[7] through an attempt to balance supply side with demand side of the land market (Fischel, 1990), protect taxpayers from imprudent private investment decisions resulting in overbuilding, and mitigate the exclusionary effect of growth which, ironically, is often caused by growth management itself (Pendall, 1995). Government intervention through restrictions, economic incentives and disincentives (Lee, 1981) is necessary, as developers and lenders have demonstrated their inability to exercise responsible stewardship

[6] The term urban sprawl refers to a premature leapfrog or "highway ribbon" development or low-density scattered development that occurs beyond the current perimeter of contiguous development. Studies claim that sprawl is caused by federal and state investment policies (Bourne, 1980), local land-use regulations (Clawson, 1972; White, 1975), average facility pricing (Blewett and Nelson, 1988), and developers' speculation (Harvey and Clark, 1965; Nelson, 1992). Because it is viewed as a waste of land and resources (Daniels, 1986; Nelson, 1992), costly to serve (Frank, 1989; Lee, 1981) and damaging to the environment, lowering land values and amenities and to a certain extent unsightly, many public policies aim to discourage it.

[7] The market economy is composed of many interrelated markets, such as markets for housing, industry and recreation. Society achieves efficiency among markets when resources are allocated to each market in order to generate the largest net benefits. This can be achieved if the output of each market is increased until the marginal cost of the next unit of production is just equal to its marginal benefit. However, the ideal assumptions for the market to achieve efficiency are never completely present. As a result, urban land markets fail to provide efficient development patterns and government intervention in the market through growth management is necessary to correct conditions causing inefficiencies.

over the real estate market (Dowall, 1986). In many localities and a few, but a growing, number of states, planners who are given growth management tools are demonstrating their ability to protect taxpayers from unwise development such as sprawl.

2.1.4 Growth Management Techniques

Along with the development of modern planning, growth management techniques are evolving and a variety of innovative measures have emerged. A vast number of growth management techniques are being used throughout the nation; however, it was only in a survey of California local jurisdictions in the late 1980s that Glickfeld and Levine (1992) reported 907 various growth management and growth control measures practiced in the first quarter of 1989.

Although the total number of observed growth management measures is large, the number can be reduced sharply after a careful examination and grouping of such measures. The reason is simple—many measures perform similar functions and pursue similar objectives, but under different names. Even so, there is still no way to exhaust all growth management measures. Following is a summarization of measures most commonly practiced by local municipalities (Glickfeld and Levine, 1992; Landis et al., 2002; Nelson and Duncan, 1995; Pendall et al., 2002):

- Urban containment boundaries with interim development boundaries, urban reserves, and urban service limits. These techniques direct urban development into areas intended or needed for urban uses and away from areas intended or needed for rural and resource areas. Boundaries create a clean break between potentially inconsistent urban and rural land uses and thereby protect rural land from urban spillovers while also providing important environmental and economic benefits to urban development.

- Population or building permit limitations. These measures, if set well below the community's expected growth rate, can severely constrain housing production and give developers incentives to build a smaller number of larger and more expensive houses.
- Appropriate capital and operational pricing of public services such as roads and schools. The choice of an appropriate financing technique is crucial for the equitable and efficient provision of public services. For many services and facilities, this is possible through user fee approaches, improvement districts, and various forms of impact fees.
- Capital improvement programs and adequate public facilities standards. These techniques ensure that public facilities will be available concurrent with demand and that development farther away does not deprive infill and redevelopment projects due to inadequate facility capacity. Moreover, when properly configured, these techniques give important signals to developers on what can be expected when and where.
- Zoning ordinances can also be adapted as growth management measures. For example, low-density-only zoning can severely reduce the number of allowed development units. Localities can also set up minimum density standards through zoning to ensure developers a minimum development expectation and thus make efficient use of public facilities and services.
- Political control or voter approval, such as a vote requirement for rezoning or for annexation. These measures provide an opportunity for local residents to participate in the planning and growth management decision-making process. Although this appears to be a neutral action during the development process, in reality it can add

additional costs by increasing the risk and uncertainty for developers and property owners, thus potentially limiting rather than creating growth.

There are several other measures available in addition to the above, including growth management elements of the comprehensive plan; preservation of land for resource production; environmental protection through exclusive-use designations; industrial and commercial floor space control; transfer/purchase of development rights; streamlined permitting; and expeditious development reviews.

2.1.5 Effects of Growth Management Programs

When examining the effects of growth management programs, studies oftentimes focus on three common areas: rate of growth (or absolute growth); housing price; and residential satisfaction. Pendall (2000) has done a most comprehensive work on this regard and found a "chain of exclusion"—certain growth measures limit housing supply and in turn exclude minority populations. A large number of studies have also been conducted to evaluate the effects of growth management,[8] but to date the findings have not proven conclusive (Baldassare and Protash, 1982; Donovan and Neiman, 1995; Glickfeld and Levine, 1992; Landis, 1992; Levine, 1999; Logan and Zhou, 1989; Mercer and Morgan, 1982; Staley, 2001; Warner and Molotch, 2000).

With respect to controlling growth, some types of growth management programs, principally residential caps, annexation controls, and voter-enacted super-majority approval requirements do appear to significantly limit population growth in the communities that adopt them. Annexation controls and super-majority approval requirements also limit housing construction. Other

[8] When evaluating growth management programs, assessments need to control for changes in largely exogenous factors, such as the rate of growth in the national and regional economies, demographic trends and similar data in order to reflect local market conditions; to account for not only primary effects but also secondary impacts and cumulative effects of the programs, both intended and unintended; and to recognize the possibility of differential short- and long-run effects.

programs, most notably urban growth boundaries (UGB), function mostly to redistribute development from fringe areas to more centralized locations.

Other studies provide different results. Landis et al. (2002) conclude that, in general, growth management programs are neither effective at controlling growth, as their advocates have hoped, nor as injurious to housing affordability as their detractors claimed, even though there is new evidence showing the increased popularity of growth management and the development of improved impact-monitoring tools.

With respect to housing prices, the results are still mixed. Studies do suggest that urban containment measures—urban growth boundaries and greenbelts—raise land and housing prices, and that the longer they are in effect and the more tightly they are drawn around existing development, the more severe this inflationary effect (Dowall and Landis, 1982; Frech and Lafferty, 1984; Knaap, 1985). Studies on permit cap also found that the controls raised housing prices (Dowall and Landis, 1982; Katz and Rosen, 1987), but they are challenged by later studies (Schwartz and Zorn, 1988; Engle, Navarro and Carson, 1992) due to flaws in method.

The findings on residential satisfaction in growth management communities appear to be quite ambiguous. Baldassare (1981) found resident satisfaction to be higher in communities that were growing moderately than in either fast-growing or slow-growing jurisdictions, but Baldassare and Protash (1982) suggested that those living in growth management communities were less satisfied than residents of communities with few controls. It is unclear whether these negative reactions are due to perceptions of growth management itself or to the continuing presence of conditions which led to municipal growth management actions.

2.2 Local Politics

Growth management policies are closely tied to local politics. After discussing growth

management policies, the focus will now proceed to the relevant conditions of local politics. As major growth and the emergence of growth management policies have been shifted from the inner city to suburban areas, this section will place its emphasis on suburban politics. However, after several decades of development and changes, suburban politics has been shifting to a theme relevant to that of urban politics. I will first discuss urban politics briefly and then compare it to the politics found in suburban areas.

2.2.1 Urban Politics

Compared with the quiet countryside and the traditional bedroom suburbs, the central theme of urban areas is both complex and diverse. In cities there are different types of populations, with various races, incomes, education levels and occupations. Many people are part of different groups with varying interests; these groups play a variety of roles in the dynamics of urban politics. Even within politics itself, there are distinctive fields. For this reason, in this section I will particularly focus on development or growth politics.

In order to understand urban politics under democratic regimes, we need to face a fundamental question: "who governs?" Since the early 1960s there has been a debate, known as the community power debate, on this question between two schools—the elite theorists and the pluralists. The elite theorists believe that in cities the power is held by a small, unaccountable oligarchy that persistently exercises local power; in other words, the power is held by a business-based ruling class rather than elected public officials (Hunter, 1953; Domhoff, 1978). Conversely, the pluralists believe that many interest groups compete in urban politics and that the power-holders shift among interest groups on an issue-by-issue basis (Dahl, 1961; Bachrach and Baratz, 1962).[9] These authors do not believe in the power elite but also do not believe that

[9] Although Bachrach (1962) has clarified himself that his point is distinct from either elitist theorists or pluralists, I have still classified him into the pluralist camp because by looking at the two faces of power, the capability and

every citizen has an equal voice. Additionally, pluralists believe that the government's role is to act as the mediator between these groups.

The debate between elite theorists and pluralists was further developed into the urban growth machine and urban regime theories, both of which are more aligned with development politics. The growth machine theory developed by Harvey Molotch (1976) states that in a locality, an elite of land-based interests have dominant power in development decision-making. These interests may include real estate developers, bankers, local business entities and public news media in their connection to growth-promoting local governments. Together, they attempt to organize local political and economic resources to make the city an attractive location for outside businesses and mobile capital. In contrast, through the urban regime theory, Clarence Stone (1989, 2003) contends that the social control theory, in which groups try to assert control over each other, is a limited way of viewing power in general and city power in particular. He promotes the "power to" rather than the "power over" model and argues that public officials need to build and maintain electoral coalitions sufficient both to win office and to govern. He suggests a process through which a number of political coalitions, of which the growth coalition or growth machine is only one, could emerge, consolidate and formulate a stable governing regime.

However, critics have complained that the above debate has proceeded on the basis that cities have substantial room for autonomous decision-making. Both sides suggest that the decisions cities have made are the products of the local political decision-making process. In reality, Peterson (1981) argues that unlike higher levels of government, cities are fundamentally limited by external factors as to what kinds of decisions they can make. Frug and Barron (2008) further

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participation of interest groups, the de facto results would be power distribution among those groups that have political capability and an interest to participating in local politics. This result is in line with the pluralists' point.

explores how state law, in terms of governmental structures and legal limitations, determines what cities can and cannot do to raise revenue, control land use, and improve city schools. They find substantial variation from on state to another.

2.2.2 Suburban Politics

At its early stage, suburban politics was simple because of its internal homogeneity. The main purpose of suburban governments is to provide the package of taxation and services. It is then that the consumer voters choose their residential location by voting with their feet. This is called the Tiebout model (Tiebout, 1956), one of the public choice models. This model has been shown to be accurate in certain situations regarding suburban conditions. For example, in areas subject to rural flooding, this spatial sorting model explains why affluent residents live in communities protected by river levees, while poor residents tend to live without these protections.

In the Tiebout model, consumer voters are considered passive in package provision, while Fischel's homevoter hypothesis (Fischel, 2005) assumes an active role for homeowners. The coined word "homevoter" indicates the connection between homeownership and political participation. According to Fischel, homeowners have a financial interest in participating in local politics, and their vigilance promotes more efficient municipal governance. This is why local governments are more likely to be efficient providers of environmental amenities and why the displacement of local taxation by state funds reduces school quality.

The Tiebout model has been further developed by Schneider (1989). In analyzing the behavior of suburban governments, Schneider states that localities pursue not customers but investors, either residents or businesses, whose movement into a jurisdiction may bolster the tax base. However, local fiscal manipulation such as tax rates, service expenditures and land-use regulations make only a small difference in the development pattern. Other stronger forces are

also at work. He concludes that the self-interest of governments contributes to even higher municipal expenditures, thus political manipulation defeats public choice in the market for public goods.

Furthermore, the Tiebout model assumes that consumers are free to move and have access to perfect information. However, this simplification of reality is not accurate even if suburbs are as homogeneous as they are assumed to be in a Tiebout model. There are always costs related to relocation from one place to another, and one can never have access to perfect information. Also, most suburbs that adopt complex growth management measures are much more complex and internally heterogeneous than the mosaic of clubs that Tiebout proposes. From this perspective, the urban politics discussed in the previous section has become more relevant to suburban politics. We will now look at today's suburbs in more detail.

First, suburbs are becoming more internally diverse as immigrants and racial/ethnic minorities move to suburbs in unprecedented numbers. In the 1980s and 1990s, significant portions of the middle class of all ethnic and racial groups have left central cities for the suburbs (Jones-Correa, 2001). By 1997, almost half of new immigrants lived in suburban areas (Schmidley and Gibson, 1999). A Brookings report uses 2000 census data to analyze racial and ethnic changes in 102 large metropolitan areas and finds that minorities make up 27 percent of suburban communities in these metro areas, up from 19 percent a decade before (Frey, 2001). However, patterns of minority suburbanization vary significantly between different metropolitan areas and between different ethnic and racial groups. For example, Monterey Park was a moderately diverse yet Anglo-conforming, middle-class Los Angeles suburb until the late 1960s. But by the 1980s, Monterey Park was transformed into the "First Suburban Chinatown" in the United States by a sizable influx of largely middle-class Asians (Horton, 1998).

Some studies even come up with the term "postsuburban" to distinguish a type of more diverse and multi-centered suburban areas. A typical postsuburban region would be Orange County, California (Kling, Olin and Poster, 1995). It has distinct locations for commerce, recreation, shopping, arts, residences and religious activities. These activities are often conducted in different places that are linked by private automobiles. Residents of any city travel throughout a postsuburban region for work, shopping, worship, recreation and the arts.

Second, even homogeneous suburbs interact with each other, enacting policies either because they are learning from each other or competing with one another. In a study on the adoption of growth control policies by cities in California, Brueckner (1998) finds evidence of strategic interaction in the choice of growth controls. When nearby cities impose stringent growth controls, a given neighboring city is likely to do the same. When nearby growth controls are mild, the city is likely to adopt mild controls as well. In a more recent California ballot box growth control study, Nguyen (2009) also observes support for strategic interaction—jurisdictions' growth control policies influence the growth decisions made by neighboring jurisdictions within the same region.

Third, outside interests may be instrumental in shaping an individual jurisdiction's policies. They may, and often do, become active on controversial issues across suburban boundaries within metropolitan regions and sub-regions. These groups include builders, chambers of commerce, elected officials and environmental advocates. Some of well-known groups active in the San Francisco Bay Area include the Greenbelt Alliance, the Santa Clara County Manufacturers' Group and the Contra Costa Council (Scott, 1985). Local chapters of state and national organizations, such as the Sierra Club, also bring the concerns of their national organizations into local politics (Frieden, 1979).

Last, multiple functioning districts, which at times overlap each other, may cast influence on the decision-making process. General-purpose government and school districts are two common examples. In most cases, the boundaries of these two entities are not identical but rather overlap each other. Thus, the government unit that sets land-use policy is not always the only unit that sets tax rates and provides public services. The situation can become even more complex because schools may be funded mainly by inter-government transfers from various states, while their boards or committees may be separate from city councils.[10]

2.3 Factors Affecting Growth Policy Adoption

For most of the United States, local governments have the power and authority to make development decisions and regulations through the "police power" delegated to them by the constitutions and legislatures of their states (Fischel, 1999). Police power is regarded as one of the inherent powers of government and almost all states grant considerable latitude to local authorities. In some areas, state governments and regional entities have also created growth management programs and are directly involved in regulating development and environmental protection (Bollens, 1992; Gale, 1992).

There are varying local growth management policies and land-use regulations across the nation. Even after taking into consideration the varying influences from each state, one can still observe a substantial variation of local land-use programs within a single state. Some of the programs are effective at regulating growth, while others are not effective at all, which may result in certain side effects (Nelson and Duncan, 1995). Why do the types of programs vary from place to place? Why do some of them work effectively as intended while others do not? How can policy-makers improve their programs in order to make them function better? In order

[10] This is true for most Western states, but not exactly for states in other regions. For example, in Massachusetts, a mayor can be an ex-officio in the school district committee and the main source of budget for their districts is from local property tax.

to understand these questions, it is essential to look into the policy adoption process and understand what factors are involved and how such factors affect policy emergence.

Scholars from a variety of fields have focused their attention on the adoption of local growth control and growth management policies. The significance of this work in the planning field is found in two of its aspects: First, it represents an intellectual effort to understand the causes and motivations behind the adoption of growth policies in order to make better evaluations of the effectiveness and unexpected costs of such policies. Second, among factors that directly or potentially lead to sprawl, local growth policy might be the most feasible one to be modified under a regional framework for reshaping the current development pattern. This idea is in fact the key effort of the current Smart Growth movement (Godschalk, 2004). Before any modification or change to growth policy occurs, policy-makers need a comprehensive understanding of factors and issues involved in the policy adoption process in order to make effective changes and at the same time avoid tremendous public conflicts.

Several factors have been identified, explicitly or implicitly, as influencing policy adoption in the literature, among which resident status, growth, and state intervention are thought to be the most important.

2.3.1 Resident Status

The status hypothesis states that white, wealthy, well-educated residents tend to adopt restrictive growth management polices because they have an interest in maintaining their high-status communities—socially and fiscally—while maximizing their property values and resources by means of economic resources and political skills (Burbank, Heying, and Andranovich, 2000; Danielson, 1976; Frieden, 1979). There are two interrelated sets of literature focusing on this hypothesis—one looks into the link between personal characteristics and

attitudes toward growth restriction, while the other focuses on the relationship between aggregated community status and the adoption of growth policy. These two sets of literature share the same argument—when residents with certain characteristics, usually higher socioeconomic status, tend to support growth limitation, communities with a higher proportion of such higher status residents are more likely to adopt measures to restrict residential development.

Empirical evidence, however, has not provided strong support for the status hypothesis. Rather, growth management support/adoption is broadly based; in general, a strong and consistent relationship between growth management supports or the incidence of growth restriction and residents' sociodemographic characteristics is lacking. Some studies find partial evidence showing that certain indicators of socioeconomic status, such as education and income, is positively related to the adoption of growth management (Connerly and Frank, 1986; Gale and Hart, 1992; Howell-Moroney, 2004; Knaap, Smith and Johnsen, 1997; Romero and Lisero, 2002). However, the majority of existing studies indicate a mixed relationship or no relationship at all (Baldassare, 1984 and 1985; Baldassare and Wilson, 1996; Bollens, 1990; Gottdiener and Neiman, 1981; Knaap, 1987; Logan and Zhou, 1990; Pendall, 2001). Some studies even find that some sociodemographic indicators operate in a manner that contradicts the conventional expectation (Albrecht, Bultena and Hoilberg, 1986).

There are concerns with this set of studies. First, if we follow the status hypothesis focusing internally on communities, the adoption of growth measures is supposed to be the outcome of political struggle between local residents and interest groups such as the growth machine. While most policy adoption studies take into account the status of local residents, these studies do not control for the influence of the growth machine. This omission may be responsible for the mixed empirical results.

Second, lower status residents may also have grounds to oppose development. There are circumstances under which lower income residents might also be seriously disadvantaged by development, by being displaced by gentrification, renewal, or redevelopment policies (Henig 1982). Lower status communities seeking superior fiscal conditions may also limit access to their communities to those contributing a positive net fiscal dividend (Buchanan, 1971). However, with limited resources and capacity, lower status residents may only be able to express a growth-limitation attitude, for there is a higher chance of their failing in a policy adoption battle with the growth machine. This may lead to inconsistent findings in both attitude/support and adoption studies.

2.3.2 Growth

In the growth hypothesis, the pace of growth, population size, growth-related problems and residents' perception of such problems are all expected to influence the attitude toward and/or adoption of growth management policies. Rapid population growth can result in dramatic changes in the quality of life as well as the so-called "bottleneck effect" in which a community's capacity to keep up with growth is severely taxed (Dowall, 1980). Large population size is expected to produce anti-growth sentiment as people react to "size effects" (Dowall, 1980). Residents' perception of growth can also influence their opinion of growth management (Baldassare, 1984). If citizens see rapid population growth as limiting their community's capacity to provide adequate public services, then dissatisfaction with local public services may be associated with favorable attitudes toward growth control and growth management.

Studies focusing on the growth hypothesis have also reached mixed conclusions. Only a few studies have found that rapid growth positively affects growth policy adoption (Protash and Baldassare, 1983; Smutny, 1998), while many have found that objectively-measured growth rate

surprisingly does not affect public support for growth management and the adoption of such policies (Baldassare and Wilson, 1996; Connerly and Frank, 1986; Logan and Zhou, 1990). Residents' perception of their communities has only a moderate predicting power of growth management policies. In an attitude survey, Baldassare (1984) has found that perceived rapid growth positively affects local concern about growth, but the perception is only weakly related to growth per se. By examining three surveys over time, Baldassare and Wilson (1996) find that the influence of perceived rapid growth on growth control support changes over time.

An apparent problem with this set of studies is that they do not control for the mitigation of growth. In the growth hypothesis, it is the negative results from growth, rather than growth itself, that cause residents' dissatisfaction; this attitude may turn into the emergence of growth management. Rapid growth may not necessarily result in such problems as traffic congestion and school overcrowding if it is well planned and regulated, or the problems might be less severe if the community has a higher capacity to accommodate such growth. Thus, indicators of negative results from growth, rather than growth itself, should be included in this type of test.

2.3.3 State Intervention

State intervention can also shape the local adoption of growth policies. States can directly intervene into local growth management efforts in two ways—mandates or incentives (Gale and Hart, 1992; Pendall, 2001). Under state mandates, all municipalities will have to adopt certain forms of growth management polices with no exceptions. Under state incentives, however, a number of communities might be attracted to adopt growth management, although they would not do so if there were no state incentives. Whether under mandates or incentives, the question therefore is not so much related to policy adoption but rather the contents of adopted polices or

policy restrictiveness, since the contents of the policies will reflect municipalities' true intention in controlling growth.

The state can also indirectly affect local growth policy through structural influences on localities' power and structure. As Frug and Barron (2008) put it, a state's local government law or the law of municipal corporations determines the legal status of local municipalities and differs from state to state. For example, the law determines whether cities can act on their own initiative or only with the express approval of the state legislature. The law can also define cities' fiscal authority and their powers to regulate land-use development within their boundaries. This kind of restriction frames city structure, under which cities operate and carry out policies that include growth management.

2.3.4 Other Factors

The above review gives us a mixed image regarding the relationship between the three key factors—resident status, growth, and state intervention—and policy adoption or policy contents. Thus we must ask if there are truly any consistent relationships, or whether some important factors influencing policy adoption are missing. Efforts have been made to examine more factors such as the local mobilization process, advocacy group formation and local political institutions.

In response to the above mixed findings, Logan and Zhou (1990) speculate that growth management, in some cases, might be "symbolic manipulations used to forestall local mobilization on growth issues rather than a consequence of such mobilization" (p. 125) and they therefore call for an examination of the political process, particularly citizen mobilization itself, behind policy adoption. Efforts have been made in this direction.

By looking at the policy adoption process marked by growth conflict and citizen mobilization, Donovan and Neiman (1992) find that status measures fail to register statistically significant

impacts on policy restrictiveness when the systematic components of growth conflict and citizen mobilization—both constructed as subjective variables based on the authors' opinion survey—are also included in the estimation. However, they argue that no direct relationship between status measures and policy restrictiveness in their model suggests that status matters: "Community status might affect a city's policy mix indirectly, through its relationship with higher conflict over growth issues that is subsequently translated into effective political mobilization" (Donovan and Neiman, 1992, p. 671).

Attention has also been paid to another more objective aspect in the political process of policy adoption—advocacy group formation. Through a series of case studies along Lake Ontario embayment communities, Pendall et al. (2005) in an unpublished research focus on the formation of environmental advocacy groups and the role they play in policy formation. They contend that groups in the policy adoption process can exaggerate their members' aggregate political influence and shift policy outcomes toward their members' preferences. Thus, they suggest that the formation of groups has intermediating effects and may be responsible, at least partially, for the inconsistent relationships found in policy adoption literature.

Putting the above reviewed factors together, I have composed a flowchart showing the growth policy adoption process (Figure 2-1). In this flowchart, I have also included an important factor—the political institutional setting that constitutes the arena for the political process and within which political mobilization occurs and advocacy groups form. However, this political institutional factor is rarely focused on policy adoption studies. As policy adoption is the focus of this study, I will devote the following section to describing it.

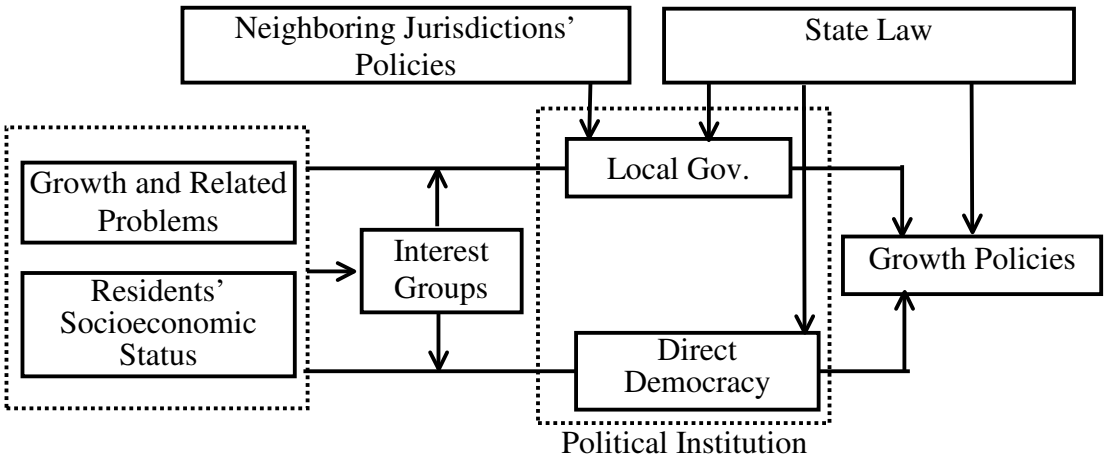

Figure 2-1. Growth Management Policy Adoption Process

2.3.5 Political Institutions

Using the definition developed by Jackson (1990), we can think of political institutions as a set of rules and organizations that facilitate the aggregation and socialization functions of society (see also Gerber, 1991). In democratic governments, political institutions facilitate the process of preference aggregation, while the nature and design of institutions determine how the policy preferences of many individuals are summed up and reflected into policy outcomes (Riker, 1980). Institutions also provide messages and information by which individuals develop or learn their own preferences (March and Olsen, 1984).

In broad term, there are two types of political institutions—direct legislation and representative legislation. Direct legislation is characterized by a relatively simple institutional structure in which voter preferences are aggregated directly into a policy outcome. Representative legislation is characterized by a more complex institutional environment in which voters first elect their representatives and then the representatives represent the interests of their constituents in the legislative process.

By means of affecting individual preference and the preference aggregation process, different political institutions may lead to different policy outcomes for a given issue and a given

distribution of voter preferences. Gerber (1991) finds that direct ballot institutions lead to different policy outcomes than legislative institutions, although legislators do respond to the constraints imposed on them by voters in their districts. These differences may be either in the substantive areas covered by policy (for example, states with initiative may institute policies in the area of government reform, such as term limits, which the legislators themselves would not pass) or in the content of policy in an existing substantive area (Gerber, 1991). From this perspective, the direct legislation process does matter in affecting policy outcomes provided they are successfully employed, meaning that the propositions on the ballot are passed.

Meanwhile, persistence of initiatives or other direct legislation tools, whether successful or not, exert certain influences over the decision-making process and tend to make the legislative body more responsive to the opinion of voters. Circulation of a large number of initiative petitions is an indicator of voter discontent and a protest against the unresponsiveness of legislative bodies to the concerns of certain groups of citizens. The threat of an initiative campaign or the collection of the required number of certified signatures may prod a legislature to enact policies that activists promote; a direct initiative campaign might be terminated if the campaign organizers are satisfied with the enacted policies (Zimmerman, 1999).

Even the mere existence of a provision for direct legislation may affect the legislative process directly (Gerber, 1991). Legislators may anticipate the possibility that a measure will be introduced as an initiative if it fails in the legislature and so adapt their legislative behavior accordingly. Anticipating a vote by the electorate may lead to shirking on the part of the legislator: he or she may avoid taking a firm position on tough issues by voting to send the measure to the electorate and "letting the voters decide." A "yes" vote on a measure that will be sent to the electorate (such as constitutional amendments or bond issues) can be justified as an

action taken to ensure a citizen vote, not necessarily as an endorsement of the policy. Similarly, a "no" vote on regular legislation can be justified as forcing the measure out of the legislature through defeat and into the electorate. This sort of strategic behavior will lead to changes not only in the total policy outcome, but also to changes in the policy produced by the legislature itself.

The number of studies focusing on the effects of political institutions on growth management is limited. By examining urban growth boundaries adopted in a large sample of California municipalities, Gerber and Phillips (2005) find that political institutional characteristics such as previous initiative use and city councils' pro-growth preference lead to the adoption of UGBs by ballot box; these ballot box UGBs, compared with council-adopted UGBs, are more extreme and more difficult to amend or repeal, but do not result in less coherent or more fragmented policy regimes.

Using Florida survey data from 2002 to 2007, Cruz (2009) seeks to understand how local government characteristics determine smart growth-related land-use regulations. He finds that the characteristics of local government, such as the mayor-council form, proportion of at-large seats in the council, and the presence of standing committees and citizens' boards are all determinants of smart growth policy adoption. Further, he also finds that in the presence of the mayor-council form of government, interest groups' influence on smart growth policy adoption is affected—homeowner associations have a stronger impact while developers have a weaker impact.

Using data of California ballot box growth controls, Nguyen (2009) tests four hypotheses regarding the motivations for local growth control—growth pressures, community status, metropolitan hierarchy, and strategic interaction. She finds that jurisdictions' growth control

policies influence the growth decisions made by neighboring jurisdictions within the same region.

In sum, compared to the common representative legislation, direct legislation may exert different influences on policy adoption and lead to different policy outcomes. This study focuses on such influences and tests both whether and how direct democracy affects growth management policies. In the following section, I will move my focus onto direct democracy and its practice in the planning field in order to set up a background for this study.

2.4 Direct Democracy

2.4.1 Direct Democracy in General

Direct democracy, also called direct legislation, is a process in which voters directly decide issues of public policy by voting on ballot propositions. It is essentially a legislature made up of all citizens and in which the citizens are directly engaged in their own self-governance. In a pure direct democracy system, the laws passed by the masses are the laws of the land and there are no other lawmaking branches of the government. In practice, however, the direct democracy process is not the sole lawmaking body; rather it works in conjunction with the state and federal legislatures, essentially creating a fourth branch of government.

Direct democracy takes different forms—initiative, referendum, recall, and town meeting. Since recall is a political procedure in which voters can remove their elected officials from office and thus not directly related to policy outcome, it is not considered in this study. Following are definitions for the three pertinent forms:

- ***Initiative***: The process through which the voters, by petition, may propose policies such as new charter provisions or ordinances and enact them by direct voting.[11] The voter response may be binding or non-binding on local government.
- ***Referendum****:* The process through which voters may approve or reject at the polls policies such as an ordinance or charter amendment passed by the legislature.[12] The results may be binding or non-binding on local government.
- ***Town meeting****:* A form of local government mainly practiced in the New England region, and in which qualified voters gather periodically to act, by direct vote, as a legislative body in matters of town business such as electing public officials, adopting local regulations, setting local tax rates and making appropriations.[13]

Direct democracy as a legislative principle was not introduced in the United States Constitution; however, the theory of direct democracy has been put into practice in a number of states. The movement toward direct democracy began in the United States in the late 1800s due to a generalized distrust by the people of local government (Fountaine, 1988). The people believed that local governments had become corrupted by corporations. This initiative was supported by the Progressive movement as a way to battle the power of corporations (Magleby,

[11] There are two types of initiative: direct initiative and indirect initiative. In a direct initiative, after the required number of signatures is acquired, the proposal is placed on the ballot for vote in the next election. In an indirect initiative, the completed petition is submitted to the legislature for enactment of legislation within a specified period of time. If no such action is taken, the measure is automatically placed on the ballot for vote in the following election.

[12] There are two types of referendums: popular and legislative. In a popular referendum, a law passed by the legislature will not go into effect for a specified period of time. A petition circulated for signatures during this time will determine if a referendum will be held concerning the law. If the required number of signatures is obtained, then the law will not be effective until the referendum takes place. In a legislative referendum, the law is referred to the polls by the legislature, either voluntarily or according to legislative requirement, for voter approval or rejection.

[13] There are two types of town meeting: open and representative. An open town meeting means that all of the town's voters may vote on all matters. In a representative town meeting, also called a limited town meeting, all of the town's voters may vote for what are called town meeting members. After the voters elect the town meeting members, these elected members conduct and vote on the rest of the town meeting's business.

1984); it was believed that direct democracy would better reflect the free decisions of the popular will.

Today, even though there is no nationwide direct democracy provision and practice, most states and local jurisdictions have some form of direct democracy, typically in the form of initiatives and referendum, available to their citizens[14] either through state constitutions, state statutes, or local home rule charters (Caves, 1992). By 2001, every state has some form of legislative referendum; 27 states permit the use of initiative and popular referendum at the state level: 24 states allow the use of initiatives and 24 states allow the use of popular referendum (Waters, 2001). These states are disproportionately concentrated in the West and Midwest.

At the local level, according to the Initiative and Referendum Institute's 2005 initiative survey,[15] over 80% of cities allow initiatives; it is more common for larger cities to have initiative provisions than smaller cities. These cities are most likely in the West and least likely in the Midwest and Northeast. The survey also shows that cities are much more likely to permit initiatives in states that allow statewide initiatives than cities in states that do not allow statewide initiatives. As to legislative referendums, according to the International City/County Management Association's 2001 Municipal Form of Government survey, nearly 90% of communities have some form of legislative referendum and there is little variation in this figure among different types of communities with regard to region, population size, and location; However, only slightly over one-third of municipalities reported that they have provisions for

[14] More than 70% of Americans live in states or cities with some form of initiative and referendum authority (Matsusaka, 2004).

[15] Nationwide data on local direct democracy is limited. The Initiative and Referendum Institute (IRI) at the University of Southern California and the International City/County Management Association (ICMA) mentioned following are the only two found which collect and maintain such data. The IRI collects data on both the state and local levels, but its local database contains limited information—only the initiatives in large cities. The ICMA conducts a Municipal Form of Government survey every five years, asking a wide variety of questions about political structures, including initiatives, referendums, and their usage within cities and counties. Both IRI and ICMA issued reports on local initiatives and referendums.

popular referendums; this direct democracy tool is prevalent in the West and in larger cities (ICMA 2001 survey).

The practice of direct democracy has been increasing since the 1970s, but its usage is generally limited when compared to its wide availability. According to the Initiative and Referendum Institute's 2009 report on state level initiative use, since the late 1970s, with California's tax-capping Proposition 13, each following decade has seen more initiatives on the ballot and more initiatives being approved. Furthermore, based on the same report, from 1904 to 2008 the majority of the initiative states have placed on the ballot, on average, no more than one measure a year. During that period seven states have on average practiced initiative more than one time and five of these are in the West—Oregon, California, Colorado, North Dakota and Arizona.

Procedures for direct democracy are not uniform, however. How state and local governments structure the direct democracy process influences the extent to which the process is used and how it is used. State and local provisions affect how many and what types of issues qualify for the ballot; the number of signatures required for placing a proposition on the ballot; the legislative review procedure; whether voters receive materials from the government explaining the ballot measures; the limitations on campaign spending; the number of votes necessary for passage and similar questions[16]. Most importantly, the legislative provisions can set the legal base as to whether or not a locality may use direct democracy tools in the planning field.[17]

Planning through initiative/referendum or ballot box is also referred to as ballot box planning. A parallel practice, the town meeting, is in essence a different form of ballot box planning. Even

[16] For a comparison among state provisions, see Magleby, 1984 (pp. 38-39).
[17] The situation here is complicated. While a common law jurisdiction may be limited by state provisions on their direct democracy practice, a charter jurisdiction in the same state may employ such practice based solely on their own charter.

though both initiative/referendum and town meeting involve direct legislation by the electorate, both have distinct differences that will be discussed separately in the following sections.

2.4.2 Ballot Box Planning

Direct democracy has long been practiced in the planning field. It is labeled as "ballot box planning," and is at times also called "do-it-yourself land-use controls," "grassroots planning" or "electoral land-use planning." Ballot box planning represents the attempts of local residents and community groups to develop and approve or disapprove planning policies through the use of initiative and referendum. The legislative body, such as a city council or county commission, is bypassed in this decision-making process. All land-use actions subject to ballot measures share the common goal of wanting to regulate the amount, rate, location, timing and/or quality of future development, at least observably.

However, the ability of voters to engage in ballot box planning is quite limited. First, there is no national initiative in the US and it seems unlikely to adopt one in the near future (Cronin, 1980). Second, rather than such an initiative being a universal and unconstrained right in state contexts, only about half of the 50 states allow initiative and referendum rights at the state level[18] (Buck, 1980; Cronin, 1980; Waters, 2001). Third, some states recognize such powers only over statewide but not local issues. The practice of local ballot box planning can be expected in only a minority of states. And finally, even in that minority of states, the ballot box planning process and outcome have been litigated frequently if not in every case; for this reason the court adds additional constraints on the use of ballot box planning.

2.4.2.1 The Scope

[18] By 2000, the number of states permitting initiative and/or referendum has reached 27 (Waters, 2001).

Twenty states[19] allow their local jurisdictions to practice ballot box planning. However, information on nationwide local ballot box planning practice is extremely limited. Myers (1999 and 2008) and Myers and Puentes (2001) conducted a series of surveys on ballot box measures that appeared on election days; their reports provide valuable information in this regard. However, California is an exception in studies on ballot box planning. Massive researches are available focusing on the practice and impacts of initiative and referendum in California localities, many with particular focus on land use and growth issues.

According to Myers' survey, ballot box planning is practiced infrequently across the country despite its wide availability. In the 2000 general election, even though over 80% of cities allow initiatives, voters placed only 55 initiatives, including state level initiatives, on the ballot box. Referendum had a larger number of 520, also including state measures, but it is still far from being labeled as common given the large number of US cities, towns and counties.

However, there is a trend toward a measurable increase in the number of ballot box planning measures, and the regional distribution pattern is also clear. Two nationwide comprehensive surveys, conducted in 1998 and 2000, revealed a substantial increase in the number and types of measures placed on the ballot box (Myers, 1999; Myers and Puentes, 2001). In 1998, there were14 state and 226 local ballot measures related to conservation, parklands, and smart growth, an increase of more than 50% over 1996. In 2000, 36 state and 539 local ballot box measures were identified, more than doubling those of 1998.[20] Although ballot box planning practices appear across the nation, the regional distribution pattern is clear—most local measures were

[19] While this number appeared in Calavita (1992, p. 4) and Nguyen (2004, p. 93), no citation was provided in either source.

[20] Cautions should be used here. Myers' 1998 survey only focused on open space measures, while his 2000 survey covered more aspects of land-use issues. If comparing only the open space measures, the results indicate only a 15.7% increase.

found in the West, followed by the Midwest, the South and the Northeast (Myers and Puentes, 2001).

A variety of growth measures have appeared on the ballot box. The issues include adopting or rejecting a general plan; rezoning of a tract of land; building height limitation; open space and park-related measures; growth management plans; rental apartment permission in certain areas; creating a buffer zone and similar issues (Caves, 1992; Myers and Puentes, 2001). However, these issues cannot be generalized to all 50 states. While a particular state may permit some of the above issues to be placed on the ballot, another state may prohibit its practice the same way.

The voter approval rate has been stable over time, and the rates for state and local level measures are almost the same. In 1998, voters passed 72% of total measures, a success rate similar to that in 1996 (Myers, 1999). In 2000, the approval rate was still about 72% (Myers and Puentes, 2001). Looking at regions, the approval rate of local measures in 2000 was highest in the Northeast, followed by the South, and then the Midwest and the West. Looking at geographic patterns, central cities passed ballot box measures at a rate of 80%, followed by suburban localities, which showed more than 75%, while rural areas observed a much lower rate of 60%.

The measures were placed on the ballot by two different means—legislative referendum and citizen initiative.[21] The former is widely used and accounted for more than 90%, while the initiatives only accounted for less than 10%. However, the smaller number of initiatives presented a much stronger influence on the nature of the adopted measures. For example, Arizona and Colorado statewide planning proposals were advanced by the Sierra Club and other environmental groups; Oregon's Measure 7, which revamps Oregon's land-use law, was proposed by conservative taxpayer groups.

[21] The exact terms used in the report are "legislative referrals" and "citizen initiatives." However, Myers did not mention popular referendum specifically. According to his description of the two means, popular referendum should be included in the second category—citizen initiatives.

Local ballot measures have a geographic distribution pattern. Of the local measures, the majority (73%) of these were placed on ballots in suburban jurisdictions, while only 12% and 15% were placed on the ballot box in central cities and rural areas respectively. Growth-related measures dominated suburban ballots. 90% of citizen-led ballot initiatives were found in suburban areas and more than three-quarters of these were growth management measures. These facts may imply that suburbs have a much higher level of controversy in growth politics.

2.4.2.2 The Court

The court has played an important role in the development of ballot box planning. While federal courts have tended to be supportive of land-use controls passed by initiative and referendum, state courts such as those in Utah, Nebraska, Arizona, New Jersey, Michigan and Washington have been more restrictive of the use of the ballot box in the adoption and amendment of such controls (Settle, 1983). However, California is unique. Its courts have defended the right of local voters to utilize these tools of direct democracy for growth management (Curtin and Jacobson, 1989), while at the same time decreeing that such activities satisfy a number of specified requirements. California voters may apply both initiative and referendum to growth control efforts without certain procedural requirements such as notice, public hearing, and even the environmental review procedures of the California Environmental Quality Act (CEQA); however, they cannot place on the ballot growth measures that unfairly discriminate against a particular parcel of property, conflict with the general plan, or will interfere with legislation addressing matters of regional or statewide concern (Zovanyi, 1992).

2.4.2.3 Why Ballot Box Planning

Voter dissatisfaction with or distrust of their representative government may result in the increased use of ballot box planning (Caves, 1992; Lucero, 2003; Magleby, 1984). Many

jurisdictions have a pro-growth attitude because they believe the benefits associated with growth, such as job and housing opportunities and increases in the tax base, outweigh the costs brought about by growth (Caves, 1992).[22] Pro-growth jurisdictions are often teamed with the growth machine (Deleon and Powell, 1989; Logan and Molotch, 1987). However, local residents may view growth from a different perspective—traffic congestion, overcrowded schools, poor infrastructure maintenance and similar problems. Accordingly, local residents may turn to the ballot box in an attempt to respond to their government's pro-growth stance in order to preserve their quality of life.

Other factors can also lead to the practice of ballot box planning. The public sector's failure to effectively implement previously-enacted measures can also cause citizens to use ballot box planning. Caves (1992) writes from the perspective that "sensing a lack of commitment on enforcing current policies, citizens have taken matters into their own hands and formulated growth control policies that allow the voters to decide whether new residential, commercial, or industrial projects will be approved." Meanwhile, some particular land use issues such as "local unwanted land use" (LULU) or "not in my back yard" (NIMBY) land use may also lead to ballot box planning (Collins, Dotson and Waters, 1985). If this kind of activity is planned in a community, local residents may develop a ballot box measure that gives them the right to approve or disapprove the location of that type of land use.

Studies have also pointed to strategic use of ballot box planning. Legislators may use the ballot box strategically as a "powerful agenda setting tool" (Magleby, 1988). Voters may turn to the initiative or referendum to get an issue before the public, dramatize it, and force the city council to publicly address the issue (Caves, 1992). The increase of single-issue politics also

[22] However, there are different arguments on this point. For example, Burke (2009) claims that not many state and local governments are so pro-development that they ignore the negative impacts of development and fail to plan for rational development.

leads to the popular use of direct democracy, as in direct democracy single-issue groups do not have to worry about unseating politicians and can go directly to the people with their appeals (Magleby, 1984).[23] The use of ballot box planning could be a response to local legislature characteristics or the structural imbalances of the makeup of local government (Gerber and Phillips, 2005; Selmi, 2002). Moreover, the contagious effect may be at work here—voters may use ballot box planning simply because their neighboring jurisdictions have used it (Nguyen, 2009).

2.4.2.4 The Debate

Ballot box planning has been popularly debated, and the debate mainly focuses on its nature and procedures. On the nature debate, proponents hail direct democracy as "real democracy" because it reduces the power of political parties, party bosses and special interests. Critics argue that direct democracy is in conflict with democratic principles such as openness, accountability, competence and fairness. In fact, it may be inefficient, unwise and undemocratic (Burke, 2009), as participants are not representative of the whole population and are only concerned with their own narrow interests while ignoring the needs of the community. Weinberg (2002) further believes that "this type of legislation is reductive in nature; it reduces a complex series of problems and issues to a sound bite."

Evidence also indicates that direct democracy may lead to the tyranny of the majority, with possible exclusionary outcomes. A 1997 study found that voters approve 75% of the direct democracy measures that seek to repeal existing civil rights laws such as fair housing and school desegregation, or to prevent public officials from enacting such laws (Lucero, 2003). Selmi (2002) also claims that the use of direct democracy in the land use context is at its most dubious

[23] The ascendancy of single-issue politics was related to the declining influence of political parties—a conversion from ideology-based politics to interest-based politics (Kalt and Zupan, 1984).

when automatically triggered and when focused on land-use decisions that have no policy aspects to them.

On the procedure debate, supporters feel that ballot box planning offers "valuable procedures for encouraging more direct democratic participation in local planning and zoning issues" (McClendon, 1990), and claim that the process can enlighten and educate voters and enable officials to hear a variety of opinions about an issue and develop widespread community support (Caves, 1992). Opponents point out that planning through the ballot box produces both a deliberative failure and a planning failure (Burke, 2009). First, the process ignores the planning process such as public hearing and committee review requirements, negotiation and mediation among different interests, and lacks the quality of information that complex issues and decisions require. Thus, voters cast their votes based primarily on catchy advertisements (Callies and Curtin, 1990; Lucero, 2003; Selmi, 2002). Second, ballot box measures jeopardize comprehensive planning and upset the delicate structure of land-use decisions. Lucero (2003) argues that planners strive to make land-use regulations from a comprehensive and long-term perspective that is consistent with a community's plan, but ballot box voters do not have such a perspective.

In sum, while the normal regulatory process is certainly superior to the use of ballot box planning, a strong case can be made in defense of this form of planning. Indeed, direct democracy can serve valuable purposes and is not necessarily incompatible with sound land-use practices (Selmi, 2002).

2.4.2.5 The Impact

Evidence has shown that growth management measures adopted at the ballot box actually slow down growth. Employing the data from California ballot measures from 1986 to 1999 and

city-level housing and demographic data, Nguyen (2007) finds that cities in which growth controls were adopted at the ballot box do have slower rates of housing growth, indicating that the adoption of ballot box growth controls is not merely symbolic politics, but can make real and measurable impacts on housing growth. The same study also finds that ballot box growth controls reduce growth in Hispanic and low-income populations, contributing to the socio-spatial segregation of cities by race and income.

Moreover, using a transaction-cost framework, an empirical analysis of 63 Ohio cities finds that cities which subject rezoning decisions to public referendum are more likely to experience a lower level of building activity by increasing uncertainty and risk for property owners and developers (Staley, 2001). The same impacts hold true whether a community voted for or against development.

In contrast, by examining general election voter requirement ballot measures from a sample of California communities taken in 2000, Gerber and Phillips (2004) find that voter requirements fail to stop new development; property owners and developers can and do adapt to the constraints created by these direct democracy institutions. However, voter requirements change the way developers interact with interest groups in the community and force developers to compensate current residents for their having to endure some of the negative aspects of growth.

The impact of ballot box planning suggests that there may be a link between ballot box planning and more restrictive growth measures. Nevertheless, the importance and impact of ballot box planning should not be overstated. Rather, while ballot box planning provides community and environmental groups with a powerful tool in their struggle against the growth machine, the potential of this tool depends on the broad political and economic context of growth and planning at the local level (Calavita, 1992).

2.4.3 Town Meeting

Established by Puritans in colonial times, the practice of town meeting is almost exclusive to the New England region. In use for over 300 years and continuing today, town meeting is claimed to be a valuable means for citizens to voice their opinions and directly affect change in their communities.

The concept of the town meeting has undergone several major alterations. In the late nineteenth century, a number of municipalities that used town meeting established finance committees to advise the electorate. More recently, the open town meeting in some towns has been converted to representative town meeting in which only elected town meeting members, instead of the electorate at large, can vote on town business. Some towns limit the decision-making of town meeting only to budget and appropriation rather than a full range of authorities. Some other towns have replaced town meeting government completely with a town council which possesses full legislative authority. Still several other towns hold only a deliberative town meeting supplemented by an official ballot, so that voters subsequently go to the polls to vote on town issues. Most surprisingly, a few towns abandoned the representative town meeting for the open town meeting, and some even reverted from a town council to town meeting.

However, not all towns have town meeting. In Massachusetts, for example, most towns do have town meeting, but a few towns are governed by town councils.[24] Towns with fewer than 6,000 inhabitants must have an open town meeting. Towns with more than 6,000 inhabitants may adopt either open town meeting or representative town meeting at their discretion.

Each town must hold an annual town meeting. Additional town meetings are called special meetings. They may be called as many times during the year as necessary. An annual town

[24] No cities in Massachusetts have town meetings. A city is governed by a city council or a board of aldermen. Towns with less than 12,000 inhabitants cannot adopt a city form of government.

meeting, unless otherwise provided by special law or charter, must be held in February, March, April or May. The Board of Selectman may delay the annual meeting, but it must be completed by the end of June.

In most cases, town meeting makes the following major decisions: the election of public officials; the salaries of elected officials; appropriation of the budget; and the town's local statutes, also called by-laws.

Most towns elect officers[25] on one day and begin conducting other business on a later day. Many towns wait a week or more between the election of officers and the first business meeting. A few towns may elect officers as early as November of one year, and conduct the business meeting in the next year. A town may divide its business meeting into two meetings. Towns that do so hold one business meeting at the beginning of the year—focused primarily on the budget, finances and taxes, and the second in the fall—focused on zoning, planning and by-laws.

Voters may insert articles into the warrant[26] of annual or special town meetings. They must do so before the selectmen close the warrant. To insert an article into the warrant, a minimum number or a minimum percentage of registered voters of the town must sign a written request.

2.4.3.1 The Scope

Nowadays, town meeting is still a distinguished feature of most New England towns.[27] According to Zimmerman (1999),[28] 413 out of 420 towns, 98% of the towns in Maine, hold town

[24] Town meeting members are not elected by party. Elections are nonpartisan. The party affiliation of a candidate for town meeting member does not appear on the ballot distributed at the town meeting.

[26] The warrant is a town meeting's agenda, which lists a meeting's time, place, and articles. A town meeting's action is not valid unless the subject was listed on the warrant.

[27] Even though rare, town meeting practice can still be found in towns in other states, especially in the Midwest, such as Michigan and Minnesota. However, their system has very limited powers compared with those found in New England towns.

[28] Zimmerman's data on New England towns and town meeting are the most complete, although they are from a decade ago. There is more recent information on those numbers, but it is not complete and shows no significant change from Zimmerman's data. An example can be seen at http://www.mma.org/images/stories/AbtLocalGov/formsofgov08.pdf.

meeting, while 113 out of 169 towns, 67% of the towns in Connecticut, have town meeting. Massachusetts, Vermont and New Hampshire are somewhere in between. The only exception is Rhode Island. An even 20 out of 31 towns in Rhode Island hold town meeting, but here it is called financial town meeting and has limited authority; it may only act on financial affairs, as the towns' legislative powers have been vested in a town council. The direct democracy tradition is now uncommon in Rhode Island, mainly due to a change in the state's constitution, which has led to a greater degree of home rule power in local jurisdictions.

Open town meeting is dominant in New England towns that hold town meeting, while representative town meeting is less common. Further, according to Zimmerman (1999), in 304 town meeting municipalities in Massachusetts, 262 towns run under open town meeting while only 42 towns use representative town meeting. In 113 town meeting communities in Connecticut, 106 towns hold open town meeting and only 7 towns have representative town meeting. In other New England states, almost all town meeting communities hold open town meeting, while representative town meeting is extremely rare.

Regarding the adoption of land-use regulations by town meeting, there are variations among these states in the scope of legislation. Although many towns in Massachusetts, New Hampshire, Vermont, and Maine adopt and modify land-use regulations and zoning ordinances directly at town meeting, in Connecticut most town meeting governments are only permitted to adopt zoning as a concept for the town, while the actual writing and adoption of specific regulations fall to an elected planning and zoning board created by the town meeting. In Rhode Island, financial town meeting cannot make decisions on land use and zoning issues.

2.4.3.2 The Debate

Similar to the debate on direct democracy in general, there are also two profoundly different views on town meeting government. Proponents emphasize that town meeting is the purest form of democracy and this process can ensure that all policy decisions are in the public interest. Citizens have the ability to directly manage public affairs, which bind them together as a community. Furthermore, advocates argue that "the meeting maximize citizen participation, allows ordinary voters to hold administrative officers directly accountable, provides psychological benefits for attendees, preserve local customs, including the town meeting supper and citizen service as town officers, and performs citizen education and community-building functions" (Zimmerman, 1999).

Noting that issues in a town meeting are subject to considerable debate, Lowell (1926) argued that the citizen voters cannot reach conclusions on how to vote on warrant articles "merely after hearing one side stated by his friends, or reading one side in his newspaper, or being simply told by his party, or by some other organization." So for voters, the decision-making process is also an educational process. Furthermore, Lowell emphasized that town meeting voters are able to question town officers and their proposals prior to voting on warrant articles and can hold the officers accountable.

Critics of town meeting argue mainly from two perspectives. First, voter participation in town meeting is exceptionally low in other than very small towns and has been declining sharply during the past four decades. In a sample of 1,435 town meetings held between 1970 and 1998, on average only 20.5 percent of the registered voters were in attendance, and only 7 percent of them spoke out (Bryan, 2004). Furthermore, even this record of low town meeting attendance is in decline. In Vermont alone, according to a 2008 poll posted online by the Vermont Secretary of State, only a little more than 10 percent of the state population voted at the annual town meeting.

In 2009, that number dropped to 7.2 percent. In fact, most New England towns with a population exceeding 5,000 have debated whether the town meeting could be reformed; the conclusion was that small rural towns might find merit in direct democracy, but larger towns were finding town meeting government to be unworkable.

Community size is the most powerful determinant of voters' participation in town meeting. In small towns the participation rate is high, while in large towns the rate is low. Bryan's model indicates that the size variable explains about 60 percent of the variance in town meeting attendance, while the next most important five predictors, such as official ballot use and the education index, reduce the variance in town meeting attendance by only an additional 8 percent (Bryan, 2004). Some researchers also attribute the decline of the town meeting to the expansion of the powers of the state and federal governments which make major decisions, thus limiting the scope of town meeting discretionary decision-making and may lead to the attitude among a significant number of town voters that the town meeting no longer addresses major issues that affect their lives (Alexander and Berger, 1949). Another reason for the decline is that the town meeting government places too many time demands on local residents and as a result they may become apolitical and leave the solution of town problems to the experts (Wood, 1958).

Second, critics assume that the low town meeting attendance facilitates control of the decision-making process by interest groups that promote their special goals and therefore conclude that the assembly is an unrepresentative body. "Informal channels of influence will come to dominate decision making; and a large number of those excluded from the informal process will feel manipulated, angry, or apathetic, cursed with self-blame" (Mansbridge, 1976).

Bryan (1995) wrote that a Vermont town meeting is dominated by middle class and professional people, while in most towns the number of blue collar and working class people

equals that of upscale professionals. The most affluent and the least affluent are less likely to attend and oftentimes the disabled, elderly, and single mothers cannot attend (Moroney, 1996). One author comments that when a town meeting gets packed, it gets packed more by NIMBYs than anyone else. In a 1996 Connecticut town meeting, "barely 50 residents came…and most were employees and officials who were there to answer questions. Some people who came in the spirit of civic pride were chased away within minutes by the hostile atmosphere" (Gross, 1996). There is also political manipulation in town meeting. In Vermont, items that farmers might oppose were sometimes placed near the end of the agenda in the hope that they would have gone home to milk before the items were called up (Bryan, 2004).

2.4.3.3 The Impact

Research on the impact of town meeting is rare, probably because town meeting practice is mostly limited to the New England region and does not impact the lives of a large population across the country. But still there have been some studies.

One such study by Zimmerman (1999) reveals that voter superintendence of town affairs has proven to be effective, and there is no empirical evidence that the thousands of small towns and cities with elected councils in the US which are in the population range of New England towns are governed better. He further concludes that town meeting is a *de facto* representative body and makes policies that promote and protect public interests. In fact, an officer of a New Hampshire town that adopted a charter providing for a town council with full legislative authority wrote in 1996 that "[t]he council has made no changes in policies as a result of the change in style of government." On the other hand, Hudson, New Hampshire abandoned a town council and reverted to the open town meeting as the legislative body.

Today, the linchpin of town meeting government is the committee system, which performs the research and reference functions typically performed by committees of a representative legislative body. Committee members become subject matter experts and provide advice to the town meeting that is followed most of the time. In fact, the town meeting is synergetic, as participants debate the pros and cons of controversial warrant articles and may adopt amendments that will result in an improved policy decision.

In a study of zoning ordinances in Massachusetts, Schuetz (2008) finds that during the 1940s and 1950s communities governed by town meeting zoned more restrictively for multifamily housing than communities governed by a council, while starting in the 1970s smaller and more affluent communities were more restrictive. As smaller communities in New England may continue to use the better-functioning town meeting, this finding may also imply that town meeting communities zoned more restrictively even after the 1970s than communities having a council.

Chapter 3. Research Questions and Hypotheses

This dissertation seeks to understand the influence of direct democracy on growth management policies. This influence is examined at two levels—a locality's growth policy composite vs. individual policies. A locality would employ all adopted growth management measures, rather than any single one of them, as a coherent whole to serve the purpose of managing growth. Pooling policies together as a composite could represent the overall restrictiveness or stringency of local efforts in growth management. At the individual policy level, the purpose of this research is to investigate whether direct democracy is associated with particular characteristics of growth management polices—in particular the exclusionary potential and management-orientation of such policies. The research also explores the three forms of direct democracy—initiative, referendum, and town meeting—to learn whether each of these forms influence growth management policies in the same manner.

3.1 Research Questions

The key question asked in this study is as follows: what are the effects of direct democracy on growth management? This larger question is then broken down into two sets of manageable research questions. The first set of questions asks how direct democracy influences a locality's overall effort in achieving growth management:

- **Question 1:** What is the effect of direct democracy on the restrictiveness of growth management policies?
- **Question 1-1:** What is the effect of town meeting on the restrictiveness of growth management policies?
- **Question 1-2:** What is the effect of initiative on the restrictiveness of growth management policies?

- **Question 1-3:** What is the effect of referendum on the restrictiveness of growth management policies?

The second set of questions is more exploratory in nature and asks how direct democracy influences particular characteristics of growth management policies:

- **Question 2:** What is the effect of direct democracy on the exclusionary potential and management-orientation of growth management policies?
- **Question 2-1:** What is the effect of town meeting on the exclusionary potential and management-orientation of growth management policies?
- **Question 2-2:** What is the effect of initiative on the exclusionary potential and management-orientation of growth management policies?
- **Question 2-3:** What is the effect of referendum on the exclusionary potential and management-orientation of growth management policies?

3.2 Conceptual Model

I have implemented an interest-based dynamic model to describe growth management adoption (see Figure 2-1 in Chapter 2). This model consists of the following elements: a stage—the political institution; players—local residents, public officials, interest groups; local conditions—both existing and evolving conditions related to growth, both observed and perceived; regional conditions—neighboring jurisdictions' competition; background setting—state provisions. On the stage, under a particular state's setting, the players with different or at times conflicting objectives interact with each other based on their preferences as they relate to local conditions. Growth management is the outcome of the interaction process.

Local residents, growth and state intervention have been discussed in previous chapters. Here I will discuss the role of the stage—direct democracy vs. representative democracy—in the

model, which is one of the key concepts asked in the research questions. I focus on the working mechanism of the two institutions as well as different tools of direct democracy—and then generate hypotheses at the end. Since interest groups may exert their influence over policies in different ways according to the various stage settings, I will also discuss the role of interest groups.

3.2.1 Direct Democracy vs. Representative Democracy

In exploring political institutions' effects on policy outcomes, Gerber (1991) finds that policy outcomes are the aggregation of individual policy preferences and that the aggregation process is facilitated by political institutional settings which provide the means for the transformation of preferences into policy outcomes. Two types of political institutions, legislative democracy and direct democracy, may cast different influences into final policy outcomes.

A legislative democracy, or representative government, tends to adopt growth polices reflecting the preference of the median voter (Downs, 1957). In such a political institution, the legislature is elected by and responsible to the general electorate. In the policymaking process, the legislature with a goal of reelection would maximize its vote by representing the common interest, or the preference, of the median voter—the general public—with consideration of the community's well-being for the present and future. In general, the public consists of a full spectrum of growth interests where the pro-growth and anti-growth interests will counteract each other and lead policy decisions toward a neutral point rather than an extreme one.

Two factors may alter the propensity of council-adopted growth policies toward a growth-promoting direction. First, due to structural constraints, in order to maintain a healthy fiscal status, local government might be forced to promote developmental policies in order to encourage economic activities (Peterson, 1981). Second, the growth machine, including the local

government, is often described as the most active and deliberate force in promoting development policies and is thus able to utilize the political process and mobilize their efforts to achieve their growth goals (Molotch, 1988). These factors may further push the government to adopt less restrictive and more growth-accommodating policies. Even so, these two statements are not always true, and have received criticism (Stoker, 1995; Burke, 2009). Stoker and Burke find that at most the growth policies will move back to a neutral position rather than to a growth-limiting intention.

In contrast, direct democracy may lead to growth-limiting policies. Magleby (1984) finds a socioeconomic bias in direct democracy participation. He points out that in direct democracy, groups of higher socioeconomic status have been over-represented in voting on legislatively-proposed statewide propositions and some initiatives, while "poorer and less educated people are less likely to participate even on highly salient measures" (p. 121) due to institutional hurdles such as the technical and legal language of ballot propositions. Although Magleby focuses his scope on the state level, it is reasonable to expand his findings to different government levels such as local municipalities. It has been established that higher socioeconomic status groups have the motivation and ability to limit growth, especially the types of growth involving lower status or minority groups, as reviewed in the previous section (Burbank, Heying, and Andranovich, 2000; Danielson, 1976; Frieden, 1979). One may therefore conclude that those higher-status groups may be more likely to adopt restrictive and sometime exclusionary growth control measures to reach their specific goals when given access to direct democracy.

Moreover, the practice of intense direct democracy, no matter if successful or not, or even the mere existence of direct democracy provisions, may exert influence over the legislative body and make them more responsive to the opinion of active voters—which are usually the higher

socioeconomic groups (Gerber, 1991; Zimmerman, 1999). If direct democracy shifts the policies adopted by the legislature in a restrictive and exclusionary direction, then the tendency of the overall efforts in growth management is also changed.

The above reasoning also suggests that the impact of direct democracy on growth management may be two-fold: in addition to the direct impact of direct democracy on growth policies, there may also be an indirect impact of direct democracy on policies through the interaction between direct democracy and the socioeconomic status of local residents.

3.2.2 Special Interest Groups

In legislative democracy, interest groups have only limited means to sway policy direction. They can make contributions to political campaigns, the direct targets of which are usually the decision makers—elected public officials. They may also persuade the general public, and through them indirectly apply influence on the elected decision makers. Their efforts through these approaches may or may not be successful, but they cannot directly participate in the decision-making process.

However, special interests may take advantage of direct democracy and shift the adopted policies toward growth restriction and exclusion. In direct democracy, they can not only persuade the decision makers, namely the ballot-voting participants, but also propose measures directly as individuals. Some studies have claimed that the true beneficiaries of direct democracy will not be the people, but the special interests (Barnett, 1915; Showell, 1952). Those special interests with issues at stake will simply adopt direct democracy as the political means to their desired ends, as direct democracy allows them to make laws free from electoral accountability and structural safeguards, i.e., the protections designed in representative democracy to encourage careful deliberation and reasoned decision-making in the legislative process. Often these interest

groups will be at the extremes of the political spectrum, proposing ideas of perceived common interest such as environmental protection, but in essence promoting narrow or private interests and impairing society as a whole, as exemplified by excluding minorities and the poor (Frieden, 1976; Keefe and Ogul, 1964).

Interest groups have comparative advantage in strategically utilizing direct democracy to reach their goals. Those special interests with their consultants, such as members of the "initiative industry," are capable of conducting sophisticated research on the existing legal landscape in order to draft measures to achieve their intended goals with an eye toward future judicial review. Furthermore, it is not unusual for them to use focus groups and conduct polls to determine how most effectively to promote or spin their measures to the voters. At the same time, the role of the people is quite limited in direct democracy. The voters neither write the language of ballot measures; nor do they typically engage in meaningful public debate about the advisability of a proposed policy. Some voters may not even know anything about a measure itself prior to entering the voting booth—they cast their vote based on their understanding of information received from media accounts, advertising and ballot pamphlets. All these conditions tend to give an advantage to the special interests and to benefit them in proposing and adopting policies to gain the results they seek.

3.2.3 The Working Mechanisms of Direct Democracy Tools

Three forms of direct democracy are investigated in this study: initiative, referendum, and town meeting. The above model applies to each of them in slightly different ways.

While representative councils occupy one end of the political institution spectrum and feature the least citizen involvement in policy adoption, initiative takes the other end of the spectrum and has no intermediary structures between voters and adopted policies. Town meeting is close to

initiative, as limited intermediary structures such as representatives and a board of selectmen are seen in representative town meeting. Voters in town meeting can question town officers, thus allowing some debate during the policy adoption process. Referendum only places a checking mechanism on council-adopted policies, thus the policy adoption procedure under this mechanism in fact coincides with that under representative councils—the same legal procedural requirement and the complex nature of policies discussed above also apply to referendum.

Matching this structural difference to the conceptual model, it can be concluded that the fewer intermediary structures the tool has, the more restrictive and exclusionary growth management policies with which it could be associated. Therefore, for resulting policy restrictiveness and potential exclusionary impact, I would rank the tools in the following decreasing order: initiative, town meeting, and referendum. In fact, growth management adopted through the referendum process should be similar to such measures adopted by councils without a referendum check. However, when compared with councils, policies adopted through various direct democracy tools exhibit similar properties—more restrictive, more likely to have potential exclusionary impacts, and less likely to have management-orientation, with the only difference being the extent.

3.3 Hypotheses

As stated in the above theoretical framework, this study provides hypotheses for the research questions commencing with the first set of questions as follow:

- **Question 1:** What is the effect of direct democracy on the restrictiveness of growth management policies?

  Hypothesis: A locality with direct democracy tends to have more restrictive growth management policies compared with a locality without direct democracy.

- **Question 1-1:** What is the effect of town meeting on the restrictiveness of growth management policies?

  Hypothesis: A locality with town meeting tends to have more restrictive growth management policies compared with a locality without town meeting.

- **Question 1-2:** What is the effect of initiative on the restrictiveness of growth management policies?

  Hypothesis: A locality with initiative tends to have more restrictive growth management policies compared with a locality without initiative.

- **Question 1-3:** What is the effect of referendum on the restrictiveness of growth management policies?

  Hypothesis: Referendum tends to have a neutral effect on local growth management in terms of restrictiveness.

For the second set of questions:

- **Question 2:** What is the effect of direct democracy on the exclusionary potential and management-orientation of growth management policies?

  Hypothesis: Compared with a locality without direct democracy, a locality with direct democracy tends to present growth management policies that have potentially exclusionary impacts and are less management-oriented.

- **Question 2-1:** What is the effect of town meeting on the exclusionary potential and management-orientation of growth management policies?

  Hypothesis: Compared with a locality without town meeting, a locality with town meeting tends to have growth management policies that have potentially exclusionary impacts and are less management-oriented.

- **Question 2-2:** What is the effect of initiative on the exclusionary potential and management-orientation of growth management policies?

  Hypothesis: Compared with a locality without initiative, a locality with initiative tends to observe growth management policies that have potentially exclusionary impacts and are less management-oriented.

- **Question 2-3:** What is the effect of referendum on the exclusionary potential and management-orientation of growth management policies?

  Hypothesis: Referendum tends to exert a neutral influence on the exclusionary nature of policies and management-orientation.

Chapter 4. Data and Methodology

This study employs a mixed method—the combination of multivariate analyses and a series of case studies—to investigate the relationship between direct democracy and growth management. The quantitative multivariate analyses construct regression models based on the proposed conceptual framework to test the statistical relationship between direct democracy and growth management, while the qualitative case studies complement the models by probing into the dynamic local policy adoption process to further understand the interaction between direct democracy and growth management. The quantitative analysis is also utilized to inform case selection, and the analytical framework helps to analyze and interpret case study results.

The analysis unit for this study is local jurisdictions with land use and growth management authorities. These jurisdictions typically include incorporated cities, towns and villages. In all Western US states, counties are responsible for land use regulations in unincorporated areas; while in many Southern and Midwest states unincorporated townships or charter townships are entitled to adopt their own land use policies. Some of these municipalities are also included in this study.

4.1 Quantitative Analyses

The quantitative analyses seek to answer the research questions on the effects of direct democracy on growth management based on empirical evidence. The datasets utilized to carry out these analyses follow.

First, this study utilizes data from a nationwide land use policy survey conducted in 2003 by Dr. Pendall and his colleagues (Pendall, Martin and Fulton, 2002; Pendall, Puentes and Martin, 2006) to characterize local growth management policies. Second, local direct democracy and other political institutional information are compiled from three sources. In early 2006, the

author conducted a nationwide survey of planning directors to collect information on local access to direct democracy and other institutional structures such as local charters (See Appendix A for the 2006 planning director survey instrument). Later that year, the author conducted another nationwide survey of APA chapter's legislative vice-presidents in each state in order to supplement the previous survey (See Appendix B for the 2006 APA legislative vice-president survey instrument). The author also purchased data from the municipal form of government survey conducted in 2001 by the International City/County Management Association (ICMA) to complement the institutional information (See Appendix C for the 2001 ICMA municipal form survey instrument). Third, the study utilizes data from the 1990 and 2000 US Census to characterize community socioeconomic status, growth characteristics and other control variables.

4.1.1 The Policy Survey and Construction of Dependent Variables

The 2003 policy survey was sent by mail to planning directors[29] of local jurisdictions in the 50 largest US metropolitan areas. The overall response rate of the survey was 58%. It covers a comprehensive set of local land use regulations including zoning, comprehensive plan, urban containment, infrastructure regulation, permit cap, and affordable housing programs.[30] I construct restrictive growth management measures based on those regulations.

4.1.1.1 Measure Grouping and Selection

In this study, I focus only on growth management measures that are related to limiting local growth, which I consider to be restrictive measures. Informed by policy evaluation literature (Glickfeld and Levine, 1992; Landis, 1992; Levine, 1999; Mayer and Somerville, 2000; Nelson and Duncan, 1995), I categorize growth policies into six groups based on their nature and objectives and then divide policies among each group based on their "average restrictive

[29] Where a planning director does not exist, the survey was sent to either another staff member (e.g., city manager, city engineer, zoning enforcement officer) or a public official (e.g., mayor, planning board chair, clerk).
[30] For a detailed description on the survey, see Dr. Pendall's dissertation (Pendall, 1995).

potential." A measure is assessed as having higher average restrictive potential if evidence is found in the literature as to whether, on average, the measure is effective in limiting growth or ineffective, yet still having substantial side effects in the constraining of growth. Otherwise, a measure is assessed as having a lower average restrictive potential. The six policy groups are as follow: pace of growth; institutional control; zoning ordinance and subdivision regulation; urban containment; public service and facilities regulation; and other measures. Policies with higher average restrictive potential in each group are characterized as those that "matter" in growth issues.

Based on this evaluation criterion, I select only those surveyed policies that pertain to limiting local growth to construct dependent variables—the restrictive growth management measures. In the end, the policies chosen as restrictive growth management measures include building permit cap, voter approval requirement (both for rezoning and annexation), low-density-only zoning (less than 8 units per acre in a jurisdiction's highest residential density category), mobile home and/or apartment prohibition, urban containment (UGB/ULL/USA/USB/greenbelt), public service and facilities regulation (impact fee and APFO).[31] See Appendix D for growth policies' grouping and evaluation.

4.1.1.2 Characteristics of Growth Management Policies

All the restrictive measures considered in this study have, on average, growth limiting impacts or side effects on growth, but the way in which they influence growth and the potential consequences, either intended or unintended, are different. Although zoning takes a general approach to growth management and is applied equally throughout a jurisdiction, nevertheless low-density-only zoning can result in racial and social exclusion through reducing residential

[31] Two policies—low-density-only zoning and mobile home/apartment prohibition—are selected from the zoning ordinance and subdivision regulation group as dependent variables in order to give zoning more weight, as zoning ordinances control both land use types and development intensity in addition to other development characteristics.

growth, decreasing the share of multifamily housing, and lowering the proportion of rental units. This practice is labeled as a "chain of exclusion" (Pendall, 2000). Another zoning control measure, the prohibition of mobile homes and/or apartments, also has exclusionary intention and impacts by restricting the construction of mobile homes and apartments whose primary users are often minorities and the poor.

Building permit cap, if set well below the community's normal growth rate, can severely constrain housing production and give builders incentives to build a smaller number of larger and more expensive houses (Zorn, Hansen and Schwartz, 1986) as well as contributing to higher local and regional housing prices (Landis, 1992; Landis, 2006). Thus, this measure may potentially lead to exclusionary consequences through its impacts on housing production and prices.

Unlike the permit cap's control effects on growth, urban containment and public service and facilities regulation aim at promoting more orderly and responsible development. Containment measures, by redistributing development from fringe areas to more central locations, attempt to contain the extent of urbanization, preserve natural land, and efficiently utilize land in urbanized areas (Pendall, Martin and Fulton, 2002). These measures may promote higher-density and infill development in urbanized areas (Nelson and Duncan, 1995). Impact fees require that builders pay a fee to fund new infrastructure and mitigate the impacts that new development may entail or cause. Impact fees aim at promoting more responsible development using the concept that "development pays for itself." APFOs condition the approval of development upon the availability of public facilities according to locally-adopted standards or levels of services (Nelson and Duncan, 1995). This measure may facilitate development by making new facilities available (Altshuler, Gómez-Ibáñez and Howitt, 1993). However, since new facilities' plans are

in most cases laid out by the public sector, APFO is oftentimes a tool of the government for controlling the location and timing of developments.

Two other similar measures, the voter approval requirement for rezoning and the voter approval requirement for annexation, do not have a specific stated purpose. Rather, they leave the decision-making authority to voters and let them decide. They can be stringent on limiting growth (Landis, 2006) because they increase the uncertainty in the development process that most developers are unwilling to face. However, the voter approval requirement for rezoning can also be grouped with zoning controls, and the voter approval requirement for annexation can be grouped with containment measures because each pair has overlapping purposes and are frequently administered as bundles.

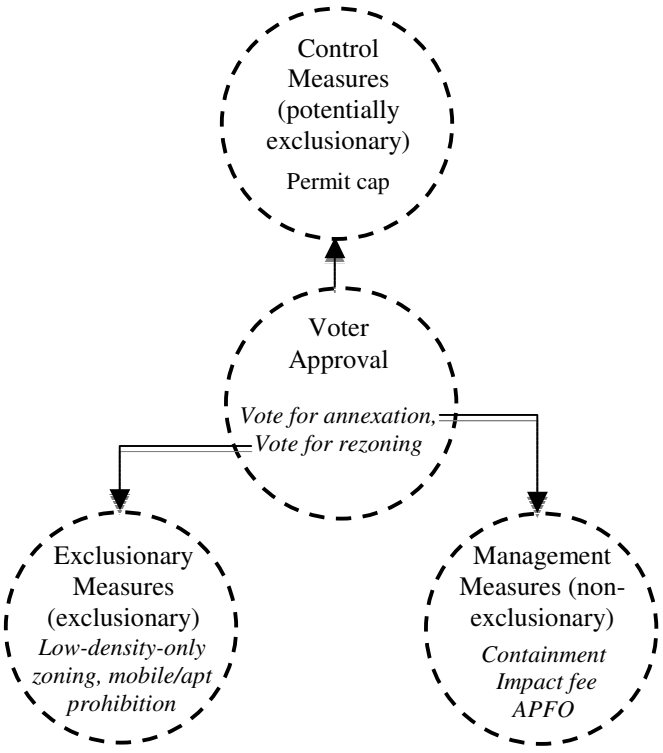

Figure 4-1 Characteristics of Growth Management Measures

In sum, low-density-only zoning, mobile home/apartment prohibition, and at times the voter approval requirement for rezoning, may be labeled as exclusionary measures (Figure 4-1); permit caps, sometimes with voter approval requirements, may be labeled as control measures with

potentially exclusionary consequences; and public service and facilities regulations and containment measures, sometimes in combination with the voter approval requirement for annexation, may be grouped as management-oriented measures that in general do not lead to exclusionary results. Voter approval requirements for rezoning and for annexation may also be pooled together to represent a new category—voter approval requirements that, on their impacts, are close to the control measures.

4.1.1.3 State Intervention

The existence of certain growth management measures in some states may be the result of state mandates, while the absence of some measures in certain states may be caused by state prohibition. Therefore, this information—the existence/absence of certain measures in certain states—cannot be foreseen in my hypotheses by predictors such as local socioeconomic status and should be excluded from the models. As I do not have information on state intervention, I use the following inference procedures to treat these particular measures:

First, if more than 90% of the respondents to the policy survey from a single state confirm a certain policy, this policy is treated as "mandatory" in that state.[32] This occurs, for example, in the cases of affordable housing density bonuses in California and APFOs in Florida. Local jurisdictions do not have a choice—they have to adopt these tools. Cases with these mandatory policy tools in that state are dropped entirely from the analyses when modeling such policy tools. Second, if 0% of the respondents from a particular state have a planning tool, I assume that state law has overridden local institutions. I then treat this tool as "forbidden," and drop these cases from the analyses for that planning tool. Third, for other cases with respondents to a policy tool between 0% and 90%, I assume there are no state requirements, either "mandatory" or

[32] The fact that many states have a small number of respondents presents difficulties for making these kinds of inferences. Here only states with 10 or more responses are used as inferences.

"forbidden," for that tool. These tools are thus suitable to be explained by the models employed in this study.

However, in the first two steps, care has been taken to note situations in which states may have permitted or prohibited certain tools for incorporated units, but not for unincorporated units. These two types of units are then divided and make inferences separately. I do not use this treatment for counties because they usually have too few respondents and therefore there are insufficient inferences for them.

4.1.1.4 Construction of Dependent Variables

In order to test the hypotheses regarding the exclusionary characteristics of growth management measures, I construct the following six growth management policy variables: building permit cap; voter approval requirement; low-density-only zoning; mobile home/apartment prohibition; urban containment; and public service and facilities regulation. They are constructed as dummy variables with 1 meaning present and 0 absent.

In order to test the restrictiveness hypotheses, I construct a composite variable—the growth management restrictiveness index—by adding together the values of the above six variables for each municipality. The assumption here is that the more growth management polices a locality has, the more restrictive its efforts are to manage growth. If a policy has nothing to do with growth management, then the locality will not bother to adopt it as a growth management measure. In general, different growth policies deal with different aspects of growth and more policies inherently cover more areas concerning growth issues. Thus a larger number of growth policies indicate more stringent growth management efforts. Together, these seven variables are used as dependent variables for analyses in this study.

There are limitations on the constructed dependent variables. First, this restrictiveness index does not take into account the local municipalities' policy context; therefore, its comparative power across municipalities might be limited. For example, a density restriction measure might be viewed as higher density in a less developed area, while treated as lower density in an already densely populated area. Second, there are a variety of informal policy measures in local municipalities such as staff level decisions to slow processing; these informal measures work together with formal measures to deal with growth issues. In many cases, their importance cannot be neglected and should be taken into account. Third, the implementation process, such as the issuance of zoning variances, differs dramatically across jurisdictions, and this difference blurs the line between the restrictive powers of local growth policies.

4.1.2 The Direct Democracy Survey and Construction of Direct Democracy Variables

In 2006, I conducted the direct democracy survey with a popular online survey tool—SurveyMonkey.[33] Utilizing the 2003 policy survey pool, the 2006 direct democracy survey was sent to the respondents who had a valid email address in the 2003 survey.[34] Before the formal survey, a test survey was sent to Cornell alumni of the Department of City and Regional Planning. The purpose was to test the feasibility of an online survey and to revise survey design based on survey outcomes and comments received. The formal survey was sent out three times in three weeks as emails and I received 262 responses in total, a response rate of 31%.[35]

The survey asks four sets of questions related to the four direct democracy tools: town meeting, initiative, legislative referendum, and popular referendum. Each set of questions

[33] For more information on this survey tool, see its website at www.surveymonkey.com.
[34] The 2003 policy survey received in total 1844 responses, of which 1204 respondents provided email addresses. The 2006 survey was sent to these 1204 email addresses. However, 379 of them were no longer valid and the survey email was bounced back.
[35] This rate is apparently lower compared with that of traditional mail surveys. However, it seems acceptable compared with other online survey response rates. In a study analyzing meta-data for 199 surveys conducted using the SuperSurvey™ cluster at http://www.supersurvey.com, the median online survey response rate is only 26.45% (Hamilton, 2003).

contains three layers regarding the tool: general provision, permission of planning decision-making with the tool, and the practice of the tool in deciding planning policies. A copy of the 2006 direct democracy survey questionnaire is attached in Appendix A.

The use of direct democracy is, in many cases, restricted to certain types of policies such as home rule charter changes and bond issues. Given this study's focus on growth management policies, the type of direct democracy access in which decision-making on planning issues is allowed should be highly relevant to this study. Unless noted otherwise, the term "direct democracy," "access to direct democracy," "initiative," "referendum," and "town meeting" thereafter used in this study refer to direct democracy tools wherein planning decision-making is allowed.

Four variables are constructed to represent direct democracy. Three of them are constructed from the survey directly to indicate the availability of three direct democracy tools: initiative; referendum; and town meeting. A general access variable is then created based on these three variables to indicate if there is access to any types of direct democracy tools in a locality. All four of the variables are constructed as dummy variables with 1 meaning available access and 0 unavailable.[36] Legislative referendum and popular referendum are pooled together to create a new variable—referendum—since these two share a similar characteristic in the mechanism in that citizens are only able to stop a measure from being adopted, but cannot propose new measures. This characteristic distinguishes these two from town meeting and initiative in which citizens can not only cast their votes but also propose new measures.

It will benefit model testing if we increase the number of direct democracy cases and then potentially utilize as many policy cases as possible. The mechanism of state provisions that

[36] To be exactly, 0 means that there is no access to direct democracy or there is access to direct democracy but it is not allowed for planning purposes.

either allow or forbid local access to direct democracy may facilitate the realization of this goal. However, I do not have complete information on such provisions.[37] An inference process similar to that for the policy measures is used here for direct democracy in order to account for the state provisions on local access to direct democracy. This process makes inferences on what direct democracy instruments local governments are theoretically allowed to use or prohibited from using in a particular state. The procedures are as follows:

First, if less than 10% or fewer than five respondents[38] from a state answer that they have a particular direct democracy tool, I make the inference that no local governments in that state have access to that tool. Second, if more than 75% from a state say they have a direct democracy tool, I assume all respondents in that state have access to that tool. Third, if between 10% and 75% of the respondents say they have access to a tool, no inference is made; I instead use the original survey results in the models. Close attention is paid to the distinction between charter jurisdiction and general law jurisdiction. While general law jurisdictions comply with their state constitution and statutes strictly, charter jurisdictions can create their own charter and have some flexibility within the state statutory framework on deciding if they wish to provide access to direct democracy. Therefore, charter jurisdictions are excluded from the inference process.

Results from the 2006 APA legislative vice-president survey and 2001 ICMA municipal form of government survey are utilized to help validate the above inference results. The inference result is found to be grounded, as it is consistent with available information from the two survey results. I do not use the two survey results directly in making inferences because neither survey

[37] I gave two efforts to collect this information—state APA chapter survey and exploration of state provisions on direct democracy. However, information collected from the APA chapter survey was limited. Only 12 of the 39 states that responded the 2003 policy survey provided firm answers. My efforts in exploring state provisions were not so successful either mainly due to the lack of specification on local planning issues in state legal documents.
[38] Again, for similar reasons as in making policy inferences, only states with 10 or more responses are used as inferences..

is complete in certain ways. In the 2006 APA legislative vice-president survey, I sent emails to all legislative vice-presidents in the US, but only received 12 useful responses. The 2001 ICMA municipal form of government survey only asked questions on general access to direct democracy, but not questions on whether or not a jurisdiction can use direct democracy tools to decide planning measures.

By utilizing the inferences, I expanded the sample size. However, one tradeoff with the inference process is that this procedure may reduce the external validity of model testing. The danger might be that the presence of a planning tool in the inference cases might be the result of other unobserved factors rather than a direct democracy tool.

4.1.3 Control Variables

According to the literature review, resident socioeconomic status, growth, characteristics of political institutions and other variables are controlled in the models. The study uses data from Census 2000 to characterize socioeconomic status, data from Census 1990 and 2000 together to derive growth variables, and data from the ICMA survey to represent the characteristics of political institutions. Data for other control variables come directly from Census findings, the 2006 direct democracy survey, and the 2001 ICMA municipal form of government survey.

It is worth mentioning that when calculating socioeconomic and growth variables, a weighted approach is applied[39] on unincorporated municipalities under the following assumption: within the geographic boundary of an unincorporated municipality, such as a county, where one or more incorporated sections are present, citizens from the incorporated part of the county may exert influence on growth management policies adopted by the unincorporated municipality. In some states, such as California, citizens living in cities have the legal right to vote on county planning

[39] Both weighted and unweighted variables are tested in the models. However, there are no substantial differences observed between the two sets of outcomes.

issues and therefore influence decisions on land use regulations beyond their jurisdiction, while in other states people residing in incorporated places are not allowed to participate in the decision-making process beyond their jurisdiction. In order to account for the varying influence exercised by residents in incorporated places on planning decisions made for unincorporated municipalities, characteristics of the incorporated sections within unincorporated boundaries are weighted based on the population share of the incorporated places over the total of both sections. For a description of the data process and the weighted approach, see Appendix E.

4.1.4 Interaction Terms

As discussed in the conceptual framework, the effect of direct democracy on growth management is two-fold: in addition to the direct impact of direct democracy on growth management policies, there is also an indirect impact of direct democracy on policies—through the interaction between direct democracy and local resident socioeconomic status. Therefore, interaction terms between direct democracy and resident status are also included and tested in the models. The assumption here is that given access to direct democracy, resident status matters to a different extent compared with situations in which no direct democracy is allowed.

4.1.5 The Models

A series of ordinal logistic regression models and binary logistic regression models[40] are used to examine the empirical relationship between local access to direct democracy and growth management policies, while other factors suggested by policy adoption studies are controlled.

[40] Model types are determined by the values of dependent variables. There are two types of dependent variables in this study: growth management restrictiveness and the existence of individual measures with values 0-6 and 0/1 respectively. These are discrete value variables and are suitable for qualitative choice models. The restrictiveness variable has ordered and more than two values and fits one of the multiple outcome models—the ordinal logistic regression model (the other multiple outcome model—the multinomial logistic regression model—is suitable to variables with unordered multiple values). The individual measure variable has only two possible outcomes and fits the binary logistic regression model.

Interactions between direct democracy and resident socioeconomic status are also included. See Table E-1 in Appendix E for a description of all the variables used in the models.

Interestingly, after a thorough examination of the direct democracy survey results, unique patterns of direct democracy tools are found in two geographic areas. While town meeting is exclusively popular in the New England region, initiative and referendum are most commonly found in areas other than the New England region. See a detailed description in Section 5.2 in Chapter 5. Based on this result, the data are split into two sets—New England region vs. Non-New England region—when testing the relationship between individual direct democracy tools and growth management[41].

4.1.5.1 Q1 Models: Growth Management Restrictiveness vs. Direct Democracy

The aim of these models is to answer the first set of research questions on growth management restrictiveness. Ordinal regression models are employed to test the relationship between direct democracy and growth management restrictiveness. To determine the differential effects of direct democracy and the interaction between direct democracy and resident status, these two terms are included in the model additively. In the first step, I include only status and growth variables with control variables and compare the results with other studies looking at the status and growth hypotheses. Then, in the second step, I add direct democracy variables into the model and look at the change of model outcomes—the influence of direct democracy on growth management restrictiveness and how this new predictor changes relationships observed in the previous step. In the third step, I add interaction terms between direct democracy and status

[41] Because both town meeting and council (with or without initiative/referendum) are mutually exclusive, it makes no sense to include town meeting into the models when examining the effects of initiative and referendum, or include initiative and referendum in the models when examining the effects of town meeting.

variables to further examine the potential effects on the growth management restrictiveness of direct democracy. The models are specified as[42]:

Step 1: $F(P_{ij}) = B_j - [B_1*X_{i1} + B_2*X_{i2} + B_3*X_{i3}] + e_i$
Step 2: $F(P_{ij}) = B_j - [B_1*X_{i1} + B_2*X_{i2} + B_3*X_{i3} + B_4*X_{i4}] + e_i$
Step 3: $F(P_{ij}) = B_j - [B_1*X_{i1} + B_2*X_{i2} + B_3*X_{i3} + B_4*X_{i4} + B_5*X_{i1}*X_{i4}] + e_i$
Where: F() is the link function—here I adopt logit form: $\ln(P_{ij} /(1- P_{ij}))$;
P_{ij} is the cumulative probability of j^{th} growth management restrictiveness category for i^{th} case;
X_{i1} is a set of socioeconomic status variables for i^{th} case;
X_{i2} is a set of growth variables for i^{th} case;
X_{i3} is a set of other control variables for i^{th} case;
X_{i4} is the direct democracy variables for i^{th} case;
$X_{i1}*X_{i4}$ is the interaction between the direct democracy and socioeconomic status for i^{th} case;
B_j is the threshold for j^{th} growth management restrictiveness category;
B_1–B_5 are coefficients of the predictors;
e_i is the error term.

4.1.5.2 Q2 Models: Growth Management Characteristics vs. Direct Democracy

These models attempt to answer the second set of research questions regarding the characteristics of growth management measures. Binary logistic regression models are employed to test the relationship between the characteristics of growth management policies and direct democracy. In theory, there is a possibility that a growth management policy might be predicted by the existence of other growth management policies in a municipality. However, other policies are not included as predictors simply because they are strongly correlated with other predictors in the models.

The design of these characteristic models differs from that of the restrictiveness models in two aspects. First, no additive variable inclusion procedure is performed because of the exploratory nature of these models. All variables are included in the models directly. Second, no interaction terms between resident status and direct democracy are included in the models, given the fact that the dependent variables in these regression models have limited variation. The binary

[42] In fact, each model specification for ordinal models represents several equations to estimate the cumulative probabilities for each categories in the dependent variable. This makes the interpretation of outcomes from ordinal models difficult. However, the signs of the coefficients can still give important insights into the effects of the estimators in the model.

logistic regression will function poorly when provided with too many predictors. Moreover, adding interaction terms will make the interpretation of model results more complicated, spinning away from the straightforwardness of the exploratory nature of these models.

The models are run for each of the six growth management measures specified in section 4.1.1. When testing the relationship between individual direct democracy tools and growth management, split datasets are used. The models take the following format:

$$\ln(P_i/(1-P_i)) = B_0 + B_1*X_{i1} + B_2*X_{i2} + B_3*X_{i3} + B_4*X_{i4} + e_i$$

Where: P_i is the probability of i^{th} case having a specific growth management policy;
X_{i1} are the direct democracy variables for i^{th} case;
X_{i2} is a set of socioeconomic status variables for i^{th} case;
X_{i3} is a set of growth variables for i^{th} case;
X_{i4} is a set of other control variables for i^{th} case;
B_0 is the constant;
B_1–B_4 are coefficients of the predictors;
e_i is the error term.

4.2 Case Studies

The quantitative analyses look at an extensive range of growth management policies and the general relationship between direct democracy and growth management. The large sample size makes the statistical relationship robust. However, the quantitative studies cannot account for the details and nuances involved in passing growth management through direct democracy, including perceived growth problems, the interest groups involved, informal growth management measures, and the policy implementation process. Qualitative studies—in this study called comparative case studies—then become necessary to complement the quantitative analyses. The case studies create a larger conceptual framework in order to understand the nature of locally adopted growth management measures, the complex interaction among status, growth, direct democracy, and state intervention, as well as the effects of direct democracy on growth management. In addition, the case studies may generate further research questions. Findings

from quantitative analyses also inform the case selection criteria and help analyze and interpret the case studies.

The following case selection criteria are adopted. First, this study will only conduct a series of case studies focusing on town meeting, as town meeting is rarely the focus of growth management literature. Second, the cases will be selected from a single state to eliminate the state contextual influence. Third, the state should have had moderate population or housing growth from 1990 to 2000 or at least should not have experienced population loss during that period. In this study, the purpose of the cases is to understand the complex political process centering on growth-related issues; as a result of the process, growth management measures emerge. A case may reveal an unusual impetus if growth management was adopted without growth. This type of unusual case could be my interest for the next step after this study. Fourth, the cases are targeted in three situations:

- A case in which there is the town meeting form of government and restrictive measures have been adopted;
- A case in which there is the town meeting form of government but less restrictive growth management measures are present;
- A case in which there is the council form of government but restrictive measures have been adopted.

Results in the first case are under expectation. The focus is given to a thorough analysis of causes and procedures of policy adoption under town meeting. Results in the second and third cases are unexpected and are worth further study as to why the results are unexpected. In all three cases, the link between town meeting and measures with potentially exclusionary effects will also be examined in detail. In all case studies, I will particularly focus on factors that were

not captured by surveys, including informal polices, the policy implementation process, the stakeholders/interest groups involved, the arguments brought to bear in the debate, unique local conditions, and the role of perceived threats to community character.

There are three New England region states in my database: Massachusetts, Connecticut and New Hampshire. Massachusetts is selected as the case study state. First, it has the typical town meeting form of government. In Massachusetts, the town meeting functions to its full extent—many towns adopt and modify land use regulations and zoning ordinances directly at town meeting. Second, communities in Massachusetts have a good population range—from 20,000 to 100,000, suggesting a reasonably complicated and interesting setting for growth studies.

After examining the survey results, I focused on a set of three cases in Massachusetts. However, after further investigation into these cases and their regional context, I dropped two of the cases and replaced them with two new cases. An example will explain my decision to make the changes. One case was selected as a less restrictive case with only two growth measures. However, when looking into its zoning code, I found that the minimum lot size requirement for its residence district is 60,000 square feet, close to one and a half acres, yet in its neighboring jurisdiction, this number is only 14,400 square feet. This measure is surely growth limiting from any perspective. Further research on this case found that although the population is increasing rapidly, this jurisdiction is still considered a rural-suburban community. There are many working farms, but golf course is a large category in its zoning code. This jurisdiction has a strong intention of keeping its open space characteristics and recreational amenities. This case is in fact restrictive in its growth management efforts, completely contradicting my intention. In the end,

the three cases I selected are the Town of Westford, the Town of Chelmsford, and the City of Leominster, all in Massachusetts[43].

After the selection of cases, I began to systematically collect background materials for them. Two types of data are collected: the broader contextual data and the targeted subject data. The contextual data include the following: local history; geographic location and the physical environment; population and socio demographic status; economy and industries; local politics and interest groups; growth and related issues; state laws; and conditions of neighboring jurisdictions. These data are collected through the US Census, state and local government websites, newspaper archives and other channels. The targeted data include two parts: local growth management measures and government form (town meeting vs. council). For growth management measures, a document review is conducted: local charters, zoning ordinances, master plans, subdivision regulations, and other growth management measures. To determine government form, I examine local charters, government websites, and town meeting or council minutes.

After the collection and digestion of contextual and subject data, I conducted telephone interviews. The purpose here is to gather detailed information on the local political process, the perception of threats from growth, the participants of local growth politics, the motivations of local residents and interest groups, and the functioning of town meeting or city council. The key informants were identified during the data collection and review process. They include the most influential figures in local growth politics, planning directors, town board selectman, city councilmen, interest group leaders from both pro-growth and anti-growth groups, and local activists. I proposed different sets of questions for different interviewees in different

[43] The Leominster case was unsuccessful and dropped later due to lack of key materials regarding its growth management polices and historical conditions.

communities, because different communities have different situations and different interviewees have different specialty areas. The questions cover local land use policies, their adoption process, the working mechanism of town meeting or council, affordable housing, and town or city budget. For a list of interview questions, see Appendix H.

I also give some consideration to improving the quality of my case studies. There are four common tests addressing the quality issue of empirical social research including case studies (Yin, 2002): construct validity, internal validity, external validity, and reliability. Following Yin's suggestions, I use some of the tactics offered in his book to address the four tests. For construct validity, I use multiple sources of evidence and have some key informants review my case study report. For example, I collected information for local land use regulations from at least three sources: the policy survey, document review, and telephone interview with public officials such as planning directors. For internal validity, I develop a conceptual model based on related studies to logically describe and explain the policy adoption process. For external validity, the logical conceptual model and the large sample quantitative analyses, which informed the case selection and interpretation, can help in making meaningful and logical inferences from the case study results. For the last test, the well-developed case study protocol insures the reliability of the case studies.

Chapter 5. Findings from Quantitative Analyses

After a careful examination of collected information, I have found evidence suggesting the existence of patterns regarding direct democracy admittance as well as relationships between direct democracy and growth management. This chapter first provides descriptive analyses of growth management policies and the availability of local direct democracy based on information from the cited surveys. These analyses set the background for model findings and discussion of the results. My findings on the relationship between growth management and direct democracy are then presented in detail.

5.1 Distribution of Growth Management Measures[44]

In the previous chapter I constructed in total seven variables to represent growth management measures and overall restrictiveness. These seven variables combine to create one composite variable—the growth management restrictiveness index—and six individual measures: building permit cap; voter approval requirement; low-density-only zoning; mobile home/apartment prohibition; urban containment; and facilities regulation. This section describes the distribution of these policy measures and lays down a framework for understanding the variations in such measures. It should be noted that the focus here is on the chosen measures rather than being a full-scale comprehensive assessment of all surveyed measures, particularly when the original survey conductor has already done such excellent work on them.[45]

5.1.1 The Composite Restrictiveness Index

The growth management restrictiveness index is the sum of six types of individual measures and has a theoretical value ranging from 0 to 6. However, its maximum value is in reality 5,

[44] The percentages in section 5.1 and 5.2 are of the survey respondents. They are not weighted to represent all jurisdictions.
[45] For a complete and detailed description of the surveyed measures, see Pendall (1995).

which indicates that no communities have adopted more than five types of growth management measures. The national mean value is 2.1, showing that on average a community utilizes slightly more than two growth management measures (see Table 5-1). The majority of communities (more than 80%) have adopted one to three measures and about 10% have four measures. Communities with five measures are rare (less than 1%) and about 6% of communities make no growth management efforts at all. If communities with more than an average number of measures (2.1) are treated as restrictive communities, then approximately one third (35%) can be viewed as restrictive communities.

Table 5-1. Distribution of Growth Management Restrictiveness Index

	Growth Management Restrictiveness Index (Number of Measures)						Less Restrictive (0-2)	More Restrictive (3--5)	Mean Value
	None	One	Two	Three	Four	Five			
Nationwide	5.8%	24.7%	34.5%	24.7%	9.5%	0.7%	65.0%	35.0%	2.1
By Region									
Northeast	2.0%	15.7%	30.9%	31.7%	17.7%	2.0%	48.6%	51.4%	2.5
Midwest	8.4%	25.6%	33.4%	24.7%	7.8%	0.0%	67.4%	32.6%	2.0
South	5.5%	34.5%	38.0%	15.5%	5.5%	1.0%	78.0%	22.0%	1.8
West	6.2%	24.8%	38.6%	25.5%	4.8%	0.0%	69.7%	30.3%	2.0
By Jurisdiction Type									
Unincorporated	7.2%	27.2%	29.7%	23.3%	11.5%	1.1%	64.2%	35.8%	2.1
Incorporated	5.2%	23.7%	36.6%	25.3%	8.6%	0.6%	65.4%	34.6%	2.1
By Population Size									
Under 50,000	5.4%	22.2%	33.2%	27.1%	11.3%	0.8%	60.8%	39.2%	2.2
50,000 or more	7.1%	32.7%	38.4%	17.5%	3.8%	0.5%	78.2%	21.8%	1.8

Regionally, communities in the Northeast are the most stringent in growth management efforts, while Southern communities seem the least restrictive. In the Northeast, the share of restrictive communities is more than half, much higher than that in the other three regions, where the highest share is less than one third. In the South, restrictive communities only account for less than a quarter (22%). Communities in the Midwest and the West are similar to each other and are positioned between the Northeast and the South in terms of growth management

restrictiveness. This result can also be reflected from the mean values of each region's restrictiveness index.

The jurisdiction type makes no substantial difference regarding growth management restrictiveness distribution. The percentage of restrictive cities, towns and villages among incorporated communities is close to one third, similar to that of restrictive towns, townships and counties among unincorporated communities; this percentage matches the national figure. As a result, the average restrictiveness values are the same, equaling the national average of 2.1.

However, population size makes a significant difference—smaller communities tend to be more restrictive compared to larger communities. The percentage of restrictive communities among smaller jurisdictions with a population of less than 50,000 is almost double the share of restrictive communities among larger jurisdictions with a population of more than 50,000 (about 40% vs. 20%). This finding is somewhat surprising, as larger communities should have more issues and thus a more complex system for dealing with such issues. Therefore, they are expected to have more measures in their growth management efforts. One possible explanation is that this pattern may coincide with the regional distribution of restrictive communities, as many communities in the Northeast tend to be smaller, particularly when compared to those in the West and South.[46]

5.1.2 Individual Growth Management Measures

Different growth management measures enjoy different levels of popularity. The results are compiled in Table 5-2. From a nationwide perspective, the facilities regulation measure is the most popular within the US—60.7% of local municipalities either charge impact fees or have adopted an APFO, indicating a close tie between housing development and the provision of

[46] The percentage of smaller communities with a population of less than 50,000 in each region is as follows: 88.60% in the Northeast; 88.90% in the Midwest; 61.00% in the South; and 51.90% in the West..

public infrastructure and services. Zoning-related growth management measures are also popular.[47] More than half of local communities prohibit the construction of either mobile homes or apartments. In their zoning ordinances, approximately one third of communities have low-density-only provisions, which require less than 8 units per acre in a jurisdiction's highest residential density category. The vote requirement on rezoning, together with the vote requirement on annexation, accounts for 45% of the total number of municipalities.[48] Urban containment is less common compared to facilities regulation and zoning measures, but still about one quarter of communities have some form of urban containment, either a UGB, a ULL, a USA, or a green belt. Building permit cap is the least common type of growth management tool—only 8 percent of communities employ this measure.

Table 5-2. Distribution of Individual Growth Management Measures

	Permit Cap	Vote Requirement	Low Density Zoning	Mobile/Apt. Prohibition	Urban Containment	Facilities Regulation
Nationwide	7.9%	45.0%	32.2%	53.8%	24.3%	60.7%
By Region						
Northeast	8.2%	58.5%	48.5%	74.6%	8.2%	52.8%
Midwest	2.7%	43.3%	29.6%	59.2%	17.6%	56.8%
South	8.9%	32.1%	14.9%	39.9%	31.2%	70.6%
West	12.7%	38.2%	6.0%	21.5%	49.7%	73.8%
By Jurisdiction Type						
Unincorporated	4.6%	44.3%	41.8%	44.6%	23.6%	54.8%
Incorporated	9.0%	45.2%	27.1%	57.7%	24.6%	63.3%
By Population Size						
Under 50,000	7.2%	49.4%	36.6%	60.5%	19.8%	58.6%
50,000 or more	10.3%	30.3%	9.6%	32.7%	37.1%	69.5%

Regional distribution of these measures presents interesting patterns, with the Northeast and the West as the two extremes in almost all situations. Three measures (permit cap, urban containment, and facilities regulation) are the most common in the West (12.7%, about half, and

[47] Zoning ordinances dominate the regulatory landscape across the US—99% of localities have zoning. In most situations zoning is the result of state mandate and not necessarily a component of growth management.
[48] In fact, 33.7% of local municipalities require a vote on rezoning specifically, but Table 5-2 does not report this number.

three quarters respectively) and the least common in the Northeast (8.2%, 8.2%, and 52.8% respectively) following the descendent order of West, South, Midwest and Northeast. There is only one exception—permit cap is relatively more popular in the Northeast (8.2%) than in the Midwest (2.7%). In contradiction to these patterns, the other three measures (low-density-only zoning, mobile home/apartment prohibition, and vote requirement) are the most common in the Northeast (half, three quarters, and about 60% respectively) and the least common in the West (6.0%, 21.5%, and 38.2% respectively) following the exactly reverse order of the above observations—Northeast, Midwest, South, and West. Yet there is one exception—vote requirement is slightly more common in the West (38.2%) than in the South (32.1%).

The extent of each measure's popularity among the four regions is different. While facilities regulation, vote requirement, and mobile home/apartment prohibition present reasonable regional differences, urban containment and low-density-only zoning show dramatic variations across regions (close to half vs. less than 10%). Permit cap is actually uncommon everywhere, probably due to its nature of over-stringency and its propensity to be under legal challenges.

In contrast to the previous section, the jurisdiction type makes a difference on certain measures. The biggest differences occur in the cases of low-density-only zoning and permit cap. While low-density-only zoning can be observed at a much higher rate in unincorporated communities than in incorporated places (42% over 27%), permit cap is more likely to be seen in incorporated places than in unincorporated communities (9% vs. 4.6%). Facilities regulation and mobile home/apartment prohibition show fewer differences in observations across the jurisdiction type, while urban containment and vote requirement measures are equally utilized in both incorporated and unincorporated jurisdictions.

Small and large municipalities present various patterns in the distribution of growth management measures. Smaller communities tend to use zoning-related measures, including low-density-only zoning, mobile home/apartment prohibition, and vote requirement. The most uneven distribution occurs in low-density-only zoning. While more than one third of smaller communities have this zoning measure, less than 10% of larger communities employ it. Larger communities tend to adopt urban containment, facilities regulation, and permit cap. The rate of 37% of larger communities employing urban containment is almost double that of smaller communities (slightly less than 20%).

5.2 The Landscape of Direct Democracy

This section describes findings from the direct democracy survey, which are divided into two layers—one applicable to any local issues and the other applicable to planning issues such as adoption of or amendments to comprehensive plans, zoning ordinances and other land-use regulations. I call the first layer direct democracy in general or general direct democracy, and the second layer direct democracy for planning or planning direct democracy.

5.2.1 Direct Democracy in General

Results from the direct democracy survey are similar to the findings of the IRI and ICMA surveys. Today direct democracy has become a common political phenomenon in local municipalities across the country. Almost all surveyed communities (97.4%) have some form of direct democracy, whether town meeting, initiative, or referendum (see Table 5-3). One can find direct democracy almost evenly across regions, no matter if in incorporated or unincorporated jurisdictions, and no matter whether in large or small communities.

The different forms of direct democracy hold varying levels of popularity. Referendum is the most popular form nationwide—83% of communities have provisions for referendum, either

legislative referendum or popular referendum. Initiative takes second place, with about two thirds of communities adopting this tool. Town meeting is uncommon across the nation, with less than 10% of communities having adopted this form of government.

Table 5-3. Distribution of Direct Democracy Access

	Direct Democracy	Town Meeting	Initiative	Referendum
Nationwide	97.4%	9.4%	66.5%	83.0%
By Region				
Northeast	95.0%	69.8%	10.9%	13.8%
Midwest	97.7%	1.8%	52.6%	94.9%
South	97.9%	4.1%	74.4%	95.2%
West	97.6%	.8%	95.2%	95.6%
By Jurisdiction Type				
Unincorporated	97.7%	11.0%	70.6%	80.7%
Incorporated	96.6%	5.1%	45.5%	89.8%
By Population Size				
Under 50,000	97.4%	10.9%	58.0%	80.3%
50,000 or more	97.8%	5.9%	82.7%	90.6%

These forms of direct democracy present certain patterns across regions. With the exception of its popularity in the Northeast, town meeting is rarely seen in other regions. Initiative is very common in the West (95%), then has a descendent order in popularity in the South and Midwest, and is least common in the Northeast (11%). Referendum enjoys a high level of popularity across regions with the exception of the Northeast, where only 13.8% of communities have access to this form of government. It should be pointed out, however, that the reported unpopularity of initiative and referendum in the Northeast is due to the classification between town meeting and initiative/referendum—these forms are classified as mutually exclusive even though at its core town meeting embraces both initiative and referendum.

There are further issues in regard to town meeting. Even within the Northeast, the distribution of town meeting is still uneven. It is a common form of government in New England states such as Massachusetts, New Hampshire and Connecticut but not common in other Northeastern states

such as New York and Pennsylvania. Since town meeting and council forms of government are mutually exclusive, in later regression tests on the relationship between growth management and different forms of direct democracy, the New England region is divided from other US areas.

Even though direct democracy is almost evenly distributed over incorporated and unincorporated jurisdictions, different forms of direct democracy show different patterns of distribution over these two jurisdiction types. While both town meeting and initiative are more likely to be seen in unincorporated jurisdictions than in incorporated jurisdictions, referendum is more common in incorporated places than in unincorporated jurisdictions.

The distribution of different forms of direct democracy over population size also presents different patterns. While town meeting is more likely to be seen in smaller communities with a population of less than 50,000, both initiative and referendum are more common in larger communities with a population equal or greater than 50,000.

5.2.2 Direct Democracy for Planning

This portion of my findings is unique in that it is the first attempt, on a nationwide scale, to look at local direct democracy provisions through which planning-related measures can be adopted. Attention should be paid to the magnitude of the findings rather than the specific numbers due to the technical limitations such as relatively small sample size, as mentioned in the Methodology chapter. The findings are presented in Table 5-4.

Planning direct democracy is becoming popular across the country, especially in the West. From a nationwide perspective, half of municipalities can practice planning direct democracy through town meeting, initiative, or referendum. In the West, 87% of local communities allow the use of direct democracy to adopt or change comprehensive plans, zoning ordinances, and other planning measures. This fact provides a sufficient background context for the West, where

numerous hot issues and controversies have emerged around ballot box planning. The lowest share of planning direct democracy communities can be found in the South and the Northeast (30% and 35% respectively), highlighting the public sector's domination in local land use issues in such regions. The Midwest is somewhere in between with a slightly higher percentage (54%) of planning direct democracy communities compared to the national average.

Table 5-4. Distribution of Direct Democracy (Applicable to Planning Measures)

	Direct Democracy		Town Meeting		Initiative		Referendum	
Nationwide	50.5%	(51.8%)	6.5%	(69.1%)	28.2%	(42.4%)	49.3%	(59.4%)
By Region								
Northeast	35.2%	(37.1%)	34.0%	(48.7%)	4.0%	(36.7%)	8.1%	(58.7%)
Midwest	53.8%	(55.1%)	1.4%	(77.8%)	24.2%	(46.0%)	52.0%	(54.8%)
South	29.7%	(30.3%)	2.0%	(48.8%)	3.2%	(4.3%)	28.1%	(29.5%)
West	87.0%	(89.1%)	.8%	(100.0%)	85.4%	(89.7%)	84.1%	(88.0%)
By Jurisdiction Type								
Unincorporated	48.5%	(49.6%)	3.9%	(35.5%)	17.5%	(24.8%)	46.0%	(57.0%)
Incorporated	51.5%	(53.3%)	4.7%	(92.2%)	33.7%	(74.1%)	51.0%	(56.8%)
By Population Size								
Under 50,000	48.2%	(49.5%)	8.4%	(77.1%)	24.2%	(41.7%)	46.3%	(57.7%)
50,000 or more	59.2%	(60.5%)	1.2%	(20.3%)	40.8%	(49.3%)	59.7%	(65.9%)

Note: The numbers in parentheses are the percentage of planning direct democracy communities over direct democracy communities.

Regional distribution of planning direct democracy conforms only partially to the regional pattern of the growth management restrictiveness index, which has been discussed in the previous section. The evidence that communities in the South have the lowest likelihood of planning direct democracy and that they are the least restrictive in growth management efforts may indicate a positive relationship between the presence of direct democracy and growth management restrictiveness. However, the fact that communities in the Northeast also have a low likelihood of planning direct democracy, while at the same time being the most restrictive among the four regions, may suggest a negative relationship between direct democracy and growth management. This contradicts the hypothesized relationship and thus adds complexity to the

study. Underlying factors may be at work, and comprehensive statistical analyses are thus required to disentangle the relationships.

The jurisdiction type presents only a miniscule difference regarding the share of planning direct democracy communities between incorporated and unincorporated jurisdictions. Among incorporated jurisdictions, 52% have planning direct democracy while among unincorporated jurisdictions this percentile is 49%. This pattern actually matches the distribution of growth management restrictiveness between jurisdiction types.

Population size has a larger gap in terms of the distribution of planning direct democracy jurisdictions between smaller and larger communities. Larger communities with a population of 50,000 or more tend to be more likely to have planning direct democracy compared to smaller communities with a population of under 50,000 (59% vs. 48%). Interestingly, we have already observed that smaller communities tend to be more restrictive in growth management efforts compared to larger communities. A tentative conclusion regarding the relationship between direct democracy and growth management from the above observations seems contrary to my hypothesis. I will also leave this question to the later regression analyses.

Regarding different forms of planning direct democracy, initiative is less likely to be allowed for planning usage when compared with town meeting and referendum. Across the country, approximately two thirds of communities have access to initiative, but only 28% can use initiative to adopt plans and land use regulations. In other words, less than half (about 42%) of direct democracy communities are planning direct democracy communities. However, this figure for town meeting and referendum are both more than half, 69% and 59% respectively.

Across the four US regions, the most impressive observations are found in the West, as both initiatives and referendums are commonly allowed to decide planning policies (about 90% in

initiative and referendum communities respectively). In the South these two direct democracy tools, especially initiative, are less commonly applicable to planning and land use issues despite their popularity in that region—only 4.3% of initiative communities in the South can adopt or amend planning policies. The shares of initiative and referendum communities with applicability to planning issues in the Northeast and the Midwest fall between the brackets of the West and South. Among the 70% town meeting jurisdictions in the Northeast, about half (one third of total jurisdictions in the Northeast) can adopt or change planning and land use decisions. This type of jurisdiction is not easily found in other areas, as town meeting communities are rare in other regions.[49]

The jurisdiction type has an interesting relationship with planning direct democracy. While town meeting and initiative are more likely to be seen in unincorporated communities as discussed in the previous section, the relationship is reversed regarding the applicability of these two tools to planning measures. In incorporated places, the share of town meeting communities that can decide planning issues is higher than in unincorporated jurisdictions (4.7% vs. 3.9%) and town meeting is also much more likely to be used to adopt and amend planning policies in incorporated places compared to unincorporated jurisdictions (92% vs. 36%). Initiative is similar to town meeting, and in incorporated places the percentage of communities having initiative provisions applicable to planning and land use issues is almost double that number in unincorporated jurisdictions (34% vs. 18%). Furthermore, the likelihood that initiative can be used to vote on planning policies in incorporated places is almost triple that in unincorporated communities (74% vs. 25%). There is only a minor difference in the share of referendum

[49] The reader may have observed that the percent of town meeting communities that can decide planning issues are substantially higher in the West and Midwest than in the Northeast. However, since the sample size is exceptionally small in those regions, these high percentage numbers are not of great significance..

communities that can use referendum to check planning measures and the possibility of referendum usage on planning issues between incorporated and unincorporated jurisdictions.

As regards the population size of communities, the distribution of the different forms of direct democracy applicable to planning matters is similar to that of the different forms of direct democracy, whether or not applicable to planning issues. Town meeting communities that can adopt planning decisions are more likely to be smaller in populations of less than 50,000. Furthermore, in the smaller town meeting communities, more than three quarters can make decisions on planning-related issues, while this number is only 20% in larger town meeting communities with populations of 50,000 or more. Initiative and referendum communities display similar patterns when assessing their applicability to planning issues. Larger communities, including larger initiative and referendum communities, tend to be more likely to allow these tools to address planning issues.

In the direct democracy survey, a practice question has been included to ask how many planning measures have been placed on the ballot box and how many of them have been passed.[50] Thirty-seven percent of jurisdictions that can adopt planning measures through initiatives have placed at least one such measure on the ballot box, and sixty-two percent of them have passed at least one measure. Thirty-five percent of jurisdictions that can place planning measures on the ballot box for a referendum, whether popular or legislative, have placed at least one such measure on the ballot box. Forty-four percent of them have passed at least one measure.

[50] These findings should be treated with caution given the small sample size. The number of responses received on practice questions is fairly small—only 59 initiative cases and 52 referendum cases. The low response rates may indicate that planning directors are not the best respondents for these questions. Clerks in local government may be more appropriate for answering them. Another potential error in the survey design is that I did not ask these questions in regard to town meeting because I believed that town meeting, as a form of government, should have the full authority to adopt all kinds of local policies. However, later readings prove that this is not the case—in some localities town meeting has only limited authority on policy making that is related to planning and zoning issues.

5.3 Growth Management Restrictiveness and Direct Democracy

In this section, I first focus on the general access of planning direct democracy and observe its relationship with growth management restrictiveness from a nationwide perspective. I then focus on access to individual direct democracy tools and examine the relationships between growth management restrictiveness and such individual access. My focus on individual direct democracy tools, as proposed in Chapter 4, is due to the regionally exclusive distinction between town meeting and initiative/referendum. Here I separate the nationwide dataset into two groups of data based on regions in which town meeting and initiative/referendum exist popularly—the New England region and the non-New England region. An additive approach is also employed in testing these models.

The findings indicate that, in general, direct democracy does exert influence over a locality's overall growth management efforts. This influence is realized through both direct and indirect routes. However, this influence shows a connection with certain types of direct democracy and geographic areas. The evidence indicates that, from a nationwide view, access to direct democracy has a negative impact on the overall restrictiveness of growth management measures. However, results also show that direct democracy may help strengthen the influence of community socioeconomic status on policy restrictiveness. When examined separately, evidence suggests that while town meeting in the New England region has a positive effect on growth management restrictiveness, initiatives and referendums in the non-New England region go against this pattern—indeed, here communities with access to initiatives or referendums encompass fewer growth management measures. Furthermore, it is interesting to observe that town meeting facilitates an independent negative impact of the white population on the propensity for a community to have restrictive measures, while the presence of initiative tends to

increase the extent to which higher community status increases the likelihood of having restrictive growth management efforts. However, when excluding California cases in the Non-New England analyses, direct democracy's influence, both direct and indirect, on policy restrictiveness disappears. Midwest region is the only area where direct democracy's influence, a negative one, on growth management restrictiveness can be observed. Direct democracy also provides a mechanism translating racial status into policy restrictiveness in the Midwest.

5.3.1 Growth Management Restrictiveness vs. General Access of Direct Democracy

I will turn first to the findings on the relationship between general access of planning direct democracy and growth management restrictiveness. A comparison of means through independent-samples t-test indicates that the average growth management restrictiveness differs between communities with direct democracy and communities without direct democracy. On average, the restrictiveness of direct democracy communities is less than that of communities without direct democracy (2.00 vs. 2.15) and this relationship is statistically significant at 0.05 level (see Section F.1 in Appendix F). However, this result cannot tell if the difference between these two types of communities can be attributed to direct democracy. Ordinal regression models are then employed to see the effects of direct democracy on growth management restrictiveness.

Table 5-5 reports the coefficient and standard error for the independent variables in each of the models' three steps. See Section F.2 in Appendix F for descriptive statistics.

In Step 1, the model uses growth management restrictiveness as a dependent variable and includes resident status and growth variables in addition to other control variables. The model shows strong support for the status hypothesis. The coefficients for both status variables—white and income—are positively significant, indicating that a community with a larger white population and higher household income is more likely to have stringent growth management

policies.[51] However, the model does not support the growth hypothesis—the growth rate (household population change from 1990 to 2000) is not significant in affecting local growth policy restrictiveness. Given the inconclusive findings related to both the status hypothesis and the growth hypothesis in the literature, these findings do not substantially add to the current evidence.

Table 5-5. Ordinal Regression Results 1 -- National Models

	Step 1		Step 2		Step 3	
	Coefficients	**Std. Error**	**Coefficients**	**Std. Error**	**Coefficients**	**Std. Error**
Direct Democracy			-.319**	.136	-1.437**	.696
Direct Democracy*White					.009	.008
Direct Democracy*Household Income					.004*	.002
White	.013***	.005	.012**	.005	.016***	.006
Household Income (thousand dollars)	.002*	.001	.002**	.001	.004***	.001
Population Growth Rate (90-00)	-.019	.100	-.025	.101	-.022	.101
Total Population (log)	-.127**	.062	-.155**	.062	-.147**	.062
Senior	-.056***	.014	-.058***	.014	-.059***	.014
Moved-in between 95-00	-.019**	.008	-.020**	.008	-.020**	.008
Northeast[1]	.589**	.239	.329	.256	.345	.257
Midwest[1]	-.374*	.206	-.498**	.211	-.501**	.214
South[1]	-.241	.201	-.397*	.215	-.418*	.217
Incorporated	.300**	.146	.243	.149	.249*	.149
Central City	-.414*	.242	-.366	.245	-.395	.246
Threshold						
[restrict = 0]	-4.085***	.944	-4.490***	.953	-3.870***	1.007
[restrict = 1]	-2.031**	.933	-2.434***	.942	-1.807*	.999
[restrict = 2]	-.464	.931	-.866	.939	-.236	.997
[restrict = 3]	1.192	.934	.805	.941	1.441	.999
[restrict = 4]	4.433***	1.053	3.989***	1.059	4.633***	1.111
N	873		858		858	
Model Fitting Chi-Square:	100.218		99.076		103.681	
Pseudo R-Square (Nagelkerke):	0.114		0.115		0.120	

Link Function: Logit

[1] Comparison Base: West

*p<0.10; **p<0.05; ***p<0.01

Dependent Variable: Growth Management Restrictiveness

[51] The exact interpretation for the findings from an ordinal model, using "white" as an example, would be that, with everything else being equal, a community with a larger white population is more likely to fall into one of the more restrictive growth management categories.

In Step 2, access to direct democracy is added into the model. Results show that the coefficient of direct democracy is significant at the 0.05 level; surprisingly, its direction is negative. This result suggests that, with everything else being equal, a community with access to direct democracy is less likely to present restrictive growth management efforts compared to a community without access to direct democracy. The inclusion of the direct democracy variable does not affect other relationships since results related to the status and growth variables remain unchanged from the previous model. However, both the model fitting the Chi-Square[52] and pseudo R-Square[53] are almost unaffected, indicating that adding this new variable does little to improve the model's explanatory power.

In Step 3, two interaction terms between direct democracy and the two status variables are added to the model in order to test the indirect influence of direct democracy on growth management restrictiveness. The larger Chi-Square and R-Square statistics indicate that this model is better, in terms of model fitting and explanatory power, than those in Steps 1 and 2.

The findings from this model reveal that there are both direct and indirect relationships between direct democracy and growth management restrictiveness. The coefficient for direct democracy is still negatively significant at the 0.05 level while the coefficient for the interaction term between direct democracy and household income is positively significant at the 0.1 level. The first result suggests that, contrary to my hypothesis, it is similar to the findings in Step 2, that a locality with access to direct democracy is less likely to have stringent growth management policies compared to a locality without access to direct democracy, when all other factors are equal. One explanation for this unexpected result could be that the study pools

[52] A larger chi-square statistic indicates that the model gives a better improvement over the baseline intercept-only model, or in other words, the model gives more adequate estimations.
[53] The pseudo R-Square summarizes the proportion of variance in the dependent variable associated with the independent variables, with larger R-Square values indicating that more of the variation is explained by the model.

different types of direct democracy tools into only one variable and may have mixed the possible differences between the tools' relationships with policy restrictiveness. Further examination of such detailed relationships may help clarify this unexpected result. Another explanation could be that direct democracy may be tied to certain types of growth management policies that are more restrictive when looking into their contents, and that a smaller number of those restrictive measures may still represent a stringent overall effort in limiting growth. This possibility indicates the need for further research efforts focusing on the content of growth management polices.

The result found on the interaction term indicates the existence of an indirect relationship between direct democracy and growth management. That income level exerts further influence on the relationship between income and policy restrictiveness in direct democracy communities is realized. This result suggests that, given access to direct democracy, communities with higher income are more likely to cast a further positive influence over growth management efforts, in addition to the existing impact of income on policy stringency. Thus, income level in direct democracy communities presents a stronger positive effect on growth management restrictiveness compared with communities without access to direct democracy, all things being equal. This indirect relationship may help, at least partially, explain the inconclusive findings regarding how status affects policy adoption. The direct relationship between status and policy adoption may be disturbed by some undiscovered influences such as the one revealed here. Once the hidden influences are quarantined, the direct relationship between status and policy adoption might be observed.

The coefficient for the interaction term between direct democracy and the white population is not significant, indicating that there is no indirect relationship between direct democracy and

growth management realized through racial composition. Or, from a different perspective, we may conclude that the presence of direct democracy does not alter the way in which race affects growth management.

Over these three models, one noticeable result is that the status hypothesis is constantly upheld given that both race and income variables are always significantly positive. On the other hand, the growth hypothesis has never been supported—the population growth rate never appeared significant in these models. As regards other controls, three variables—total population, percentage of seniors, and percentage of newcomers who moved in within the last 5 years—are significantly and negatively related to growth management restrictiveness, also a constant over these three models. Regions and jurisdiction types also matter to a certain extent in affecting local growth management efforts.

The results from the above models suggest that there are both direct and indirect relationships between direct democracy and growth management. However, there are different forms of direct democracy, and we do not know how each of them interacts with growth management. The following two sections will look at this interaction and observe the effects of town meeting, initiative, and referendum on growth management.

5.3.2 Growth Management Restrictiveness vs. Town Meeting

This section focuses on the New England region to see how town meeting affects growth management. A comparison of means through independent-samples t-test indicates that the average growth management restrictiveness differs between communities with town meeting and communities without town meeting. On average, the restrictiveness of town meeting communities is greater than that of communities with a council (3.28 vs. 2.05) and this relationship is statistically significant at 0.01 level (see Section F.3 in Appendix F). However,

this result cannot tell if the difference between these two types of communities can be attributed to the existence of town meeting. Ordinal regression models are then employed to see the effects of town meeting on growth management restrictiveness.

Table 5-6 reports the coefficient and standard error for the independent variables in the New England models. Also see Section F.4 in Appendix F for descriptive statistics.

Table 5-6. Ordinal Regression Results 2 -- New England Models

	Step 1		Step 2		Step 3	
	Coefficients	**Std. Error**	**Coefficients**	**Std. Error**	**Coefficients**	**Std. Error**
Town Meeting			2.481***	.621	11.232**	4.623
Town Meeting*White					-.109**	.053
Town Meeting*Household Income					.003	.005
White	.050	.033	.019	.038	-.053	.057
Household Income (thousand dollars)	.000	.002	-.002	.002	-.001	.004
Population Growth Rate (90-00)	-.846	2.816	-1.818	3.085	-.983	3.185
Total Population (log)	.390	.369	.340	.388	.431	.395
Senior	-.238*	.093	-.145	.095	-.148	.097
Moved-in between 95-00	-.005	.065	.110	.078	.127	.079
Central City	-1.748*	1.044	-2.114*	1.178	-2.231*	1.194
Threshold						
[restrict = 0]	2.853	4.792	2.359	5.095	-2.430	6.502
[restrict = 1]	4.834	4.770	4.422	5.087	-.276	6.501
[restrict = 2]	6.428	4.793	6.113	5.128	1.526	6.544
[restrict = 3]	7.999*	4.825	8.348	5.172	3.824	6.538
[restrict = 4]	11.399**	4.954	11.918**	5.275	7.494	6.534
N	70		63		63	
Model Fitting Chi-Square:	15.294		33.335		37.925	
Pseudo R-Square (Nagelkerke):	0.207		0.432		0.476	
Link Function: Logit						
*p<0.10; **p<0.05; ***p<0.01						
Dependent Variable: Growth Management Restrictiveness						

Once again, in Step 1 the model uses growth management restrictiveness as the dependent variable and includes resident status and growth variables in addition to other control variables.[54]

[54] Two variables—region and jurisdiction type—used in the national models are dropped from this set of models because they are not applicable to the dataset—all cases here are in the Northeast region and all are incorporated places.

None of the status and growth variables are statistically significant, indicating that in the New England region local growth management policies are not affected by either residential status or growth rate.

In Step 2, the town meeting variable is added into the model. When this is done, both the model fitting Chi-Square and pseudo R-Square increase substantially, indicating that adding the town meeting variable into the model makes a substantial contribution to the model's explanatory power.

In this model, the coefficient for town meeting is positive and significant at the 0.01 level. This result indicates that in the New England region town meeting localities tend to have more restrictive growth management policies compared with localities with a council form of government, all other things being equal. This relationship is consistent with my hypothesis. Moreover, adding the town meeting variable into the model does not affect the outcome of other variables from the Step 1 model. Still, none of the status and growth variables are significant, indicating that status and growth may not affect growth policies.

In Step 3, two interaction terms between town meeting and status variables are added into the model to test the indirect influence of town meeting on growth management restrictiveness. The larger Chi-Square and pseudo R-Square statistics indicate that this model is a further improvement over the Step 2 model by adding these new terms.

The evidence from this model shows that town meeting has both a direct and indirect influence over growth management. The coefficient for town meeting is positively significant at the 0.05 level, indicating that town meeting localities, compared with localities having a council type of government, tend to present more stringent growth management efforts when other things are equal. The coefficient for the interaction term between town meeting and the white

population is also significant at the 0.05 level, but its sign is negative. This suggests an indirect relationship between town meeting and growth management—in town meeting localities a larger proportion of white population may decrease the likelihood of having stringent growth management policies, but this relationship may not exist in localities with a council form of government. The coefficient for the interaction term between town meeting and income is not significant, indicating that the relationship between income level and growth management policies is most likely the same in both town meeting and council communities.

The negative sign of the coefficient for the interaction term between town meeting and the white population does not conform to my theoretical framework. Another interpretation is that in town meeting jurisdictions, the higher proportion of minority population tends to be associated with more restrictive growth management policies when other things remain the same. This finding is difficult to explain. A possible reason could be that town meeting communities may be associated with certain types of growth management polices and these policies vary in content. If a more white town meeting community presents more stringent contents over a less white town meeting community, this variation may compensate for the smaller number of growth measures in the more white community. Another possible explanation is that the minority population in the New England region might be different from the common perception, as it is poor and less educated. Further exploration in this direction may help clarify the issue here. Furthermore, there may be undiscovered factors influencing the relationship between race, town meeting, and growth management. Once their effects are isolated, a positive relationship between white and growth management in town meeting communities might be observed.

Here the results on status and growth variables are unchanged from those in the previous models, indicating that race, income and growth rate are constantly not associated with growth

management policies in the New England region. The only control variable that seems important in these models is central city. Its coefficient is constantly significant over the three models and its negative sign indicates that, when compared to a suburban location, a central city tends to have less restrictive growth management efforts when other things are equal.

Nevertheless, there is a concern regarding data limitation in these New England models. As seen, the case numbers for these models are fairly small—70 cases for the Step 1 model and 63 cases for the Step 2 and 3 models. This limitation may impair the randomness of the sample. In other words, it may reduce the representativeness of the collected cases. The findings from these models should thus be treated with caution. In the next section it is interesting to see how initiative and referendum affect growth policy restrictiveness in areas other than the New England region.

5.3.3 Growth Management Restrictiveness vs. Initiative and Referendum

This section focuses on the non-New England region to see how initiative and referendum affect growth management. First, a comparison of means through independent-samples t-test indicates that the average growth management restrictiveness differs between communities with initiative/referendum and communities without initiative/referendum. On average, the restrictiveness of communities with initiative/referendum is less than that of communities without initiative/referendum (1.89 vs. 2.17) and this relationship is statistically significant at 0.01 level (see Section F.5 in Appendix F). However, this result cannot tell if the difference between these two types of communities can be attributed to the existence of initiative/referendum. Ordinal regression models are then employed to see the effects of initiative/referendum on growth management restrictiveness.

A three-step additive approach is also applied here. Results are reported in Table 5-7. See Section F.6 in Appendix F for descriptive statistics. In Step 1, the model uses growth management restrictiveness as a dependent variable and includes resident status and growth variables in addition to other control variables.[55] The results from this model are consistent with those from the national models. Both coefficients for the two status variables—white and income—are positively significant at the 0.05 level, indicating that higher status communities tend to have more restrictive growth management policies when everything else is controlled. The coefficient for the growth rate is insignificant, suggesting that growth does not have a systematic affect on growth policies.

In Step 2, initiative and referendum are added into the model. Both the model fitting Chi-Square and pseudo R-Square increase substantially, indicating that adding the two new variables considerably improves the model's explanatory power. In other words, initiative and referendum help explain the variation in growth management restrictiveness.

The findings from this model indicate that a jurisdiction with access to referendum is less likely to be associated with restrictive growth policies compared with a jurisdiction without access to referendum, when everything else is equal. The coefficient for referendum is negatively significant at the 0.01 level. As growth management restrictiveness is represented by the number of restrictive growth measures, the above result may be expressed in a different way—a referendum community tends to have fewer restrictive growth policies. Because referendum as a direct democracy tool places an additional electoral check, either approval or disapproval, on council-adopted policies rather than generating new policies, it is likely to reduce the total

[55] Municipal form variables such as form of government (mayor-council vs. council-manager), term limit for elected officials, and the election method (at large vs. by district) were also tested by including them into the models in this section. However, they make no meaningful difference in the results.

number of adopted growth policies. The next question would then be whether there is a systematic pattern between referendum and the types of growth measures it kills.

Table 5-7. Ordinal Regression Results 3 -- Non-New England Models

	Step 1		Step 2		Step 3	
	Coefficients	**Std. Error**	**Coefficients**	**Std. Error**	**Coefficients**	**Std. Error**
Initiative			.197	.211	-2.210**	.975
Referendum			-.576***	.165	-.181	.860
Initiative*White					.028**	.011
Referendum*White					-.003	.010
Initiative*Household Income					.001	.004
Referendum*Household Income					-.001	.004
White	.012**	.005	.011**	.005	.029***	.009
Household Income (thousand dollars)	.003**	.001	.003**	.001	.003	.002
Population Growth Rate (90-00)	-.012	.101	-.021	.102	-.018	.103
Total Population (log)	-.136**	.063	-.186***	.064	-.202***	.065
Senior	-.051***	.014	-.051***	.015	-.051***	.015
Moved-in between 95-00	-.019**	.009	-.021**	.009	-.022**	.009
Northeast[1]	.616**	.268	.268	.310	.098	.323
Midwest[1]	-.351*	.207	-.474**	.235	-.609**	.242
South[1]	-.233	.202	-.337	.252	-.506*	.262
Incorporated	.289*	.159	.114	.165	.104	.167
Central City	-.306	.252	-.251	.260	-.247	.261
Threshold						
[restrict = 0]	-4.179***	.976	-4.844***	.996	-3.695***	1.115
[restrict = 1]	-2.123**	.965	-2.790***	.984	-1.625	1.108
[restrict = 2]	-.551	.962	-1.209	.980	-.032	1.106
[restrict = 3]	1.150	.966	.497	.982	1.679	1.108
[restrict = 4]	4.405***	1.118	3.748***	1.131	4.933***	1.243
N	803		773		773	
Model Fitting Chi-Square:	72.487		80.005		88.136	
Pseudo R-Square (Nagelkerke):	0.091		0.104		0.114	

Link Function: Logit

[1] Comparison Base: West

*p<0.10; **p<0.05; ***p<0.01

Dependent Variable: Growth Management Restrictiveness

The model does not provide evidence to support that initiative has an influence over growth management restrictiveness since the coefficient for initiative is insignificant. However, these relationships could have been disturbed by an indirect relationship between initiative/referendum

and growth policies, as occurred in the model for the New England region. We will next conduct a further examination in that direction.

The inclusion of initiative and referendum in the model does not change the coefficients for the two status variables. Both of them are still positively significant at the 0.05 level, indicating support for the status hypothesis. Growth hypothesis is still not supported by the model because the coefficient for growth rate is insignificant. Changes to other control variables are also minor.

In Step 3, four interaction terms between initiative/referendum and status variables are added into the model to test the indirect influence of initiative and referendum on growth management restrictiveness. The larger Chi-Square and R-Square statistics reflect that this model can better explain the dependent variable than the Step 1 and 2 models. The findings from this model are interesting.

First, the results indicate that a community with access to initiative is less likely to have restrictive growth measures compared to a community without access to initiative, given the negatively significant coefficient for initiative. Thus, the results suggest that an initiative community tends to have fewer restrictive growth measures. This result contradicts my hypothesis in which I assume that initiative is associated with more restrictive growth management efforts. How can this result be explained? Local residents may adopt certain measures to manage growth through ballot box initiatives given the unresponsiveness or ineffectiveness of their representatives. In so doing, the voters may make the adopted measures so restrictive that there will be less need in the future to adopt other measures to limit growth. This would explain how a community with access to initiative may present fewer growth measures, yet the overall growth management efforts could still be restrictive. Further research examining the content of policies adopted through the ballot box may help to clarify this issue.

Second, the evidence indicates that there is also an indirect relationship between initiative and growth management, and that this relationship is realized by associating community socioeconomic status with growth policies in initiative communities. More specifically, the coefficient for the interaction term between initiative and white is positively significant at the 0.05 level, suggesting that in initiative communities a larger proportion of the white population is more likely to be associated with restrictive growth management, particularly as this effect is in addition to the existing relationship between white and growth management. This conforms to my theoretical framework in which I assume that when given access to direct democracy, voters with a higher socioeconomic status have the incentives and resources to promote stringent growth measures. However, the coefficient for the interaction term between initiative and income is not significant. This implies that in initiative communities, growth management restrictiveness may hold a race-bias rather than an income-bias.

Third, the coefficient of referendum has now become insignificant. Additionally, the interaction terms between referendum and status are also not significant. These results may suggest that there is no indirect relationship between referendum and growth management, and that the inclusion of these terms disturbs the existing direct relationship between referendum and growth management, thus causing it to disappear in the model. I did a test by removing the interaction terms between referendum and status but kept the interaction terms between initiative and status; the results confirmed my supposition—the coefficients for initiative and referendum, as well as for the interaction term between initiative and white are all significant, with the former two showing as positive and the latter one negative.

The inclusion of the interaction terms in the model makes one change regarding the status hypothesis—the coefficient for income is no longer significant, even though its sign is still

positive. Still, we can reasonably conclude that the status hypothesis is partially supported. The growth hypothesis is not supported because the coefficient for growth rate is insignificant. The results for other variables remain unchanged.

5.3.4 Further Analyses

Results from the above analyses show that the relationship between town meeting and growth management restrictiveness conforms my hypothesis, but the relationship between initiative/referendum and growth management restrictiveness contradicts my hypotheses. In the regression models' outputs, the variable "region" shows a strong significant influence. This may indicate a collinearity problem between direct democracy and region. Similar analyses for each region may be worth an effort. In addition, like town meeting in New England region, direct democracy in California may differ from other states[56]. Following analyses (see Table 5-8) are conducted without cases from New England states and California.

Without California and New England states, direct democracy in the national model becomes insignificant. So do the interaction terms between direct democracy and socioeconomic status variables. These results suggest that direct democracy has no impacts over growth management restrictiveness. The negative relationship between direct democracy and policy restrictiveness observed in previous models may be largely due to the impacts of town meeting in New England region and direct democracy in California.

In three of the four regional models (without New England states in the Northeast model and without California in the West model), no significant relationship, direct or indirect, between direct democracy and growth management has been observed. The only exception is the Midwest model in which direct democracy is negatively associated with policy restrictiveness and the

[56] In fact, all California municipalities have access to direct democracy and they can adopt or modify land use regulations through direct democracy.

relationship is statistically significant at 0.05 level. This model also indicates an indirect relationship between direct democracy and policy restrictiveness through the interaction between direct democracy and race. The interaction term between direct democracy and white is positively significant, suggesting higher proportion of white may translate into restrictiveness through direct democracy.

Table 5-8. Ordinal Regression Results 4 – Coefficients of Models without New England States and California

	National	Northeast	Midwest	South	West
Direct Democracy	-.771	1.174	-3.180**	-1.075	7.715
DD*White	.002	-.015	.034**	-.011	-.121
DD*Household Income	.001	.000	-.004	.018	.012
White	.005**	-.012	.028***	-.008	-.023
Household Income (thousand dollars)	.006	.005	.002	.021*	.016**
Population Growth Rate (90-00)	.001	.725	-.061	-.091	-.223
Total Population (log)	-.176***	-.147	-.417***	-.076	.101
Senior	-.038**	-.020	-.098***	-.027	.002
Moved-in between 95-00	-.023***	-.091**	-.039***	-.012	.020
Incorporated	.184	-.711*	.819***	-.633*	-.625
Central City	-.374	1.157	-.385	.589	-.187
Threshold					
[restrict = 0]	-4.505***	-9.302***	-6.253***	-2.786	-1.942
[restrict = 1]	-2.422**	-6.550**	-4.320***	-.308	.711
[restrict = 2]	-.854	-4.993*	-2.681*	1.428	2.773
[restrict = 3]	.762	-3.363	-.830	2.858	4.669
[restrict = 4]	4.010***	-.031		4.795*	
N	733	125	332	195	81
Model Fitting Chi-Square:	56.982	12.567	64.623	12.535	15.219
Pseudo R-Square (Nagelkerke):	.079	.101	.187	.066	0.184
Link Function: Logit					
*p<0.10; **p<0.05; ***p<0.01					
Dependent Variable: Growth Management Restrictiveness					

5.3.5 Summary

The findings from the ordinal regression models suggest that direct democracy plays a role in influencing local growth management restrictiveness. In addition to a direct relationship between them, direct democracy also helps the translation of community status into growth management

efforts. However, this influence is limited to certain types of direct democracy and certain geographic areas.

From a nationwide perspective, local provision for direct democracy has a negative impact on the propensity to have restrictive growth measures. In addition to this direct impact, evidence shows that direct democracy has an indirect impact on growth management in that the presence of direct democracy may alter how community socioeconomic status influences growth management and make such influence even stronger. However, further analyses show that these results might be a false picture. Different forms of direct democracy at different geographic areas may have different types of association with growth management.

In the New England states, town meeting shows a positive connection with growth management restrictiveness. However, by helping translate community status into growth management, town meeting gives income a negative impact on overall restrictiveness. In states outside New England, initiative and referendum prevail, but the evidence suggests that the two follow different routes in order to be associated with growth management. Similar to general access of direct democracy, initiative seems to have a negative association with the likelihood of having restrictive growth policies, and its existence may trigger a stronger positive impact by community status on growth polices. The results also indicate that referendum is likely to have only a direct link with local growth efforts and that it tends to be negatively associated with policy restrictiveness. However, when excluding California cases in the analyses, direct democracy shows no influence over policy restrictiveness in the Non-New England areas and the indirect relationship between direct democracy and policy restrictiveness also fades away. The negative relationship between direct democracy and growth management restrictiveness is only

observed in the Midwest region and there direct democracy also provides a mechanism through which higher proportion of white can be translated into restrictive growth measures.

The results from the New England models and the non-New England models differ. This validates the separation of nationwide data into the above two sets which examine the different forms of direct democracy. One implication from the results for future direct democracy research is that according to the purposes of the research, by pooling together varying forms of direct democracy, we may mix their different, and even at times conflicting, impacts into a compliant universe, yet miss the important uniqueness of each tool's impact.

The findings from these models also suggest directions for future studies. The presence of direct democracy, as well as initiative and referendum, is associated with a smaller number of growth measures. One explanation could be that direct democracy may be tied with certain types of growth management policies that are actually more restrictive when looking closely at their contents, so that a smaller number of restrictive measures may still represent a stringent overall effort to limit growth. This recommends further research to look at the association between direct democracy and individual growth management measures. Efforts focusing on the content of growth management polices could further improve understanding on this matter.

In New England, town meeting may help translate community status into growth management, but the relationship is negative. In addition to the possible explanation discussed above, another explanation could be that the minority population in the New England region might be different from the common perception, as this population is poor and less educated. Further exploration in this direction may help clarify the issue. Furthermore, there might be undiscovered factors influencing the relationship among status, town meeting, and growth

management. Once their affects are isolated, a straightforward relationship between status and growth management in town meeting communities might be observed.

5.4 Growth Management Characteristics and Direct Democracy

In this section, the aim is to explore whether direct democracy is associated with two characteristics of growth management—exclusionary potential and management-orientation. I focus on following six types of growth management tools—permit cap; vote requirement; low-density-only zoning; mobile home and/or apartment prohibition; urban containment; and facilities regulation—and examine their relationships with direct democracy access. Among the six tools, low-density-only zoning and mobile home/apartment prohibition are identified as having exclusionary potential, while urban containment and facilities regulation are more management-oriented and do not have exclusionary potential, while permit cap and vote requirement are somewhere in between in this regard.

Similarly to the previous section, I first focus on the general access of direct democracy and look at its relationship with growth management tools from a nationwide perspective. I then focus on the different forms of direct democracy, those being town meeting, initiative, and referendum, and examine the relationships between growth management measures and such individual direct democracy access. Again, because of the regionally-exclusive distinction between town meeting and initiative/referendum, I separate the nationwide dataset into two groups of data according to their geographic locations—the New England region and the non-New England region.

Findings indicate that direct democracy has a connection with the exclusionary potential of local growth management measures and a negative relationship with management-orientation; this connection is carried out through certain forms of direct democracy. The results suggest that

both town meeting communities in the New England region and initiative communities in the non-New England region are more likely to have measures that would exclude the poor and minorities. However, from a national perspective, no evidence indicates the existence of connections between general access to direct democracy and exclusionary measures—rather communities with some form of direct democracy tend less likely to have management-oriented measures. The findings from the models also show that both initiative communities and referendum communities are less likely to present management-oriented growth measures.

However, findings from this section should be treated as the result of exploratory efforts. The found relationships are more or less statistical occurrences and lack sound theoretical support. The interpretation of the relationship between an individual growth measure and direct democracy is limited to a certain extent because growth measures do not usually exist individually. Many measures are complementary to each other and often consist of a coherent rather than a fragmented policy regime, thus they should be treated as a whole and interpreted altogether. Interaction terms between direct democracy and community status were also tested in these models, but the results are not reported as these terms make little improvement to the models.

5.4.1 Individual Growth Management Measures vs. General Access of Direct Democracy

Six logistic regression models corresponding to the six types of growth management tools are employed to examine the relationship between direct democracy and individual growth management tools. Each of the six growth management tools is used as a dependent variable, and access to direct democracy is included as the key independent variable of interest, while community status, growth rate, and other related factors are controlled. Table 5-9 reports the

coefficient (B) and exponentiated coefficient (e^B) for the independent variables in each of the models. Descriptive statistics and classification tables are listed in Appendix F.

Table 5-9. Logistic Regression Results 1—National Models

	Permit Cap		Vote Requirement		Low Density Zoning		Mobile/Apt. Prohibition		Urban Containment		Facilities Regulations	
	B	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**
Direct Democracy	.668	1.951	.162	1.176	.086	1.090	.160	1.173	-.640***	.527	-.906***	.404
White	.048***	1.049	.000	1.000	.015***	1.015	-.017***	.983	.025***	1.025	.008	1.008
Household Income	-.004	.996	.001	1.001	.002	1.002	.013***	1.013	.001	1.001	-.003***	.997
Growth Rate (90-00)	-.011*	.989	.000	1.000	-.002	.998	-.001	.999	.001	1.001	.001	1.001
Total Pop. (log)	.122	1.130	-.243***	.784	-.505***	.604	-.258***	.773	.265***	1.304	.277***	1.319
Senior	-.172***	.842	.015	1.015	-.064***	.938	-.011	.989	-.042**	.959	-.016	.984
Moved-in btwn 95-00	.031	1.032	-.006	.994	-.033***	.967	-.015*	.985	-.009	.992	.035***	1.036
Midwest[1]	-1.539***	.215	-.457***	.633	-.474***	.622	-.473***	.623	1.081***	2.946	-.623***	.537
South[1]	.786	2.196	-.499**	.607	-.361	.697	-1.015***	.362	1.738***	5.686	-.532**	.588
West[1]	.661	1.936	-.316	.729	-1.347**	.260	-2.491***	.083	2.901***	18.192	-.012	.988
Incorporated	.471	1.601	.046	1.047	-.618***	.539	1.100***	3.003	-.505***	.604	.464***	1.591
Central City	.154	1.167	-.522**	.593	-.850*	.427	-.213	.808	.263	1.301	-.512**	.600
Constant	-7.153***	.001	2.323***	10.206	5.240***	188.605	3.371***	29.096	-6.020***	.002	-3.041***	.048
N	773		1416		1328		1548		1328		1088	
Pseudo R^2 (Nagelkerke):	0.185		0.084		0.271		0.289		0.239		0.175	

[1] Comparison Base: Northeast

*p<0.10; **p<0.05; ***p<0.01

The results from these models indicate that direct democracy may not make a contribution to the possible exclusion of growth management. Direct democracy is not statistically significant in the low-density-only zoning model and the mobile home/apartment prohibition model, each of these having growth measures that have exclusionary impacts. In permit cap and vote

requirement models, direct democracy is also insignificant, indicating that direct democracy may not contribute to the measures with exclusionary potential.

In the above four models, all the coefficients for direct democracy are positive. However, the lack of significance may indicate that the observation of the positive relationship could be by chance. We cannot reach any conclusion on the relationship between direct democracy and exclusionary growth measures or measures with exclusionary potential. This might, however, at least be a good sign to the establishment and employment of direct democracy. Furthermore, different forms of direct democracy may have different relationships with growth management measures, and thus blending them into a whole may have blunted each individual relationship. Looking at how different forms of direct democracy influence growth management may help disentangle their complex relationships.

However, the evidence indicates that direct democracy may discourage the use of management-oriented growth measures. In both the urban containment and facilities regulation models, direct democracy is negatively significant at the 0.01 level, suggesting that finding management-oriented measures such as urban containment and facilities regulation in direct democracy communities is less likely. As urban containment and facilities regulations aim to promote ordered and efficient development rather than stopping growth, the disconnection between direct democracy and management-oriented measures plus the finding that direct democracy is associated with fewer growth measures may suggest a lack of deliberative and mediate efforts to manage growth in direct democracy communities. In such communities, the orientation to growth is likely to be either promoting or simply limiting. Further examination of which forms of direct democracy contribute to this discouragement would be interesting.

Community status seems to play an important role in the association with growth management measures. The results indicate that the percent of white population is positively associated with permit cap, low-density zoning and urban containment, yet is negatively associated with mobile home/apartment prohibition. However, the evidence does not show that white has a significant connection with vote requirement. Compared with white, income's connection with growth measures is limited. The results show that household income is positively associated with mobile home/apartment prohibition, but negatively associated with facilities regulation.

Surprisingly, the growth rate seems to play a role only rarely in contributing to the propensity for having a growth measure. The only exception is found in the permit cap model. Contrary to the common perception, growth seems to reduce the likelihood of having a permit cap.

Among other control variables, larger population size or more newcomers who moved in during the last five years seem to have a connection with management-oriented measures as well as with smaller population size or less newcomers with measures having exclusionary potential. Communities with more senior residents have the tendency to decrease the likelihood of having permit cap, low-density-only zoning and urban containment. Incorporated jurisdictions tend to be more likely to have mobile home/apartment limitation and facilities regulation, but less likely to have low-density-only zoning and urban containment. Central cities are less likely to have vote requirement, low-density-only zoning and facilities regulation. Although a region's influence is quite complex, two interesting patterns are seen—mobile home/apartment prohibition is most likely to be found in the Northeast and then, in descending order, in the Midwest, the South, and least likely in the West, while urban containment follows exactly the reverse order; it is most likely to be found in the West and least likely in the Northeast.

5.4.2 Individual Growth Management Measures vs. Town Meeting

This section focuses on the relationship between town meeting and growth management measures. Utilizing data from the New England region, six logistic regression models corresponding to the six types of growth management tools are examined. Again, each of the six growth management tools is used as a dependent variable; town meeting is included as the key independent variable of interest, while community status, growth rate, and other related factors[57] are controlled. Table 5-10 reports the coefficient (B) and exponentiated coefficient (e^B) for the independent variables in each of the models. See Appendix F for descriptive statistics and classification tables.

Table 5-10. Logistic Regression Results 2 – New England Models

	Permit Cap		**Vote Requirement**		**Low Density Zoning**		**Mobile/Apt. Prohibition**		**Urban Containment**		**Facilities Regulations**	
	B	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**
Town Meeting	.162	1.176	22.244	4.578E9	1.388*	4.005	.309	1.362	-18.435	.000	.604	1.829
White	.001	1.001	.054	1.055	.081	1.085	.020	1.020	-.055	.947	.054	1.055
Household Income	-.012	.988	.000	1.000	-.004	.996	.010	1.010	.004	1.004	-.002	.998
Growth Rate (90-00)	-.017	.983	-.032	.969	.094	1.098	.057	1.058	.079	1.082	-.069*	.933
Total Pop. (log)	.294	1.342	.926	2.524	-1.735***	.176	.195	1.216	.012	1.012	.099	1.104
Senior	-.258	.773	-.088	.916	-.267**	.766	-.159	.853	.272	1.313	-.008	.992
Moved-in between 95-00	.164	1.178	.001	1.001	-.209*	.812	-.108	.897	.080	1.084	.153*	1.166
Central City	-21.202	.000	-21.295	.000	-17.747	.000	-.886	.412	.567	1.762	2.185*	8.893
Constant	-5.286	.005	-13.377*	.000	20.012**	4.908E8	2.033	7.639	-4.569	.010	-10.868*	.000
N	44		74		80		80		78		77	
Pseudo R^2 (Nagelkerke):	0.474		0.704		0.674		0.218		0.381		0.218	

*p<0.10; **p<0.05; ***p<0.01

[57] Two variables—region and jurisdiction type—are dropped due to lack of variation. All cases are in the Northeast region and all are incorporated jurisdictions.

The findings from these models suggest that in the New England region, town meeting has a connection with exclusionary growth management measures. The coefficient for town meeting is positively significant in the low-density-only zoning model, indicating that the presence of the town meeting form of government in a community increases the likelihood of having low-density-only zoning measures. No evidence shows significant associations between town meeting and other growth management measures.

The result that town meeting communities tend to have low-density-only zoning requires consideration. In the New England region, a majority of local jurisdictions have a zoning ordinance, but the contents of this ordinance vary across jurisdictions. The systematic application of low-density zoning in town meeting communities may reveal a deliberate manipulation of available land use tools to exclude certain types of housing development and potentially certain types of population. However, whether or not such manipulation is intentional is unknown. Detailed case studies looking into the preferences and motivation of town meeting participants may give further clarity in this matter.

It is surprising to find that community status does not play a role in influencing the likelihood for a community in the New England region to have a particular growth measure. Compared to the findings in the previous section that the status variables are active in the national models, this result may indicate that the New England region is unique and the manner in which factors affect growth policy emergence is different here than in other areas. However, as in the previous section, growth seems to rarely play a role in contributing to the propensity for having a growth measure. The only exception is found in the facilities regulation model, where growth seems to reduce the likelihood of having such measure. This result is also contrary to the common perception.

Only a few control variables seem occasionally to be important in affecting the possibility of having a growth management measure in a New England jurisdiction. In the low-density zoning model, a community with smaller population size, fewer senior residents, or fewer newcomers who moved in during last five years tends to be less likely to have low-density-only zoning. In the facilities regulation model, central cities with more newcomers tend to be more likely to have a facilities regulation in the form of either impact fees or an APFO.

It should be noted that the sample size for these models is relatively small, ranging from 44 cases in the permit cap model to 80 cases in the low-density zoning model and mobile home/apartment prohibition model. This may limit the representativeness of the cases and caution should be used in making inferences from these findings.

5.4.3 Individual Growth Management Measures vs. Initiative and Referendum

The focus will now turn to the relationship between initiative/referendum and growth management measures. The data for the models in this section are from the non-New England region and again six logistic regression models corresponding to the six types of growth management tools are examined. Each of the six growth management tools is used as dependent variables; initiative and referendum are included as the key independent variables of interest, while community status, growth rate and other related factors are controlled. Table 5-11 reports the coefficient (B) and exponentiated coefficient (e^B) for the independent variables in each of the models. See Appendix F for descriptive statistics and classification tables.

The findings from these models indicate that initiative is closely tied with exclusionary growth management measures. In the mobile home/apartment prohibition model, initiative has a coefficient of 0.605, positively significant at the 0.01 level. This result implies that in the non-New England region, the provision for initiative increases the probability of a community to

have a mobile home/apartment prohibition. However, no evidence shows connections between initiative and other exclusionary measures or measures with exclusionary potential.

Table 5-11. Logistic Regression Results 3 – Non-New England Models

	Permit Cap		Vote Requirement		Low Density Zoning		Mobile/Apt. Prohibition		Urban Containment		Facilities Regulations	
	B	e^B	B	e^B	B	e^B	B	e^B	B	e^B	B	e^B
Initiative	-.805	.447	.227	1.254	-.111	.895	.605***	1.832	-1.405***	.245	.267	1.306
Referendum	.890	2.436	-.073	.929	-.020	.980	.008	1.008	-.083	.920	-1.129***	.323
White	.045***	1.046	-.002	.998	.012**	1.012	-.017***	.983	.025***	1.025	.011*	1.011
Household Income	-.004	.996	.001	1.001	.002	1.002	.013***	1.013	.001	1.001	-.002	.998
Growth Rate (90-00)	-.009	.991	.000	1.000	-.001	.999	-.001	.999	.001	1.001	.000	1.000
Total Pop. (log)	-.023	.977	-.268***	.765	-.511***	.600	-.272***	.762	.295***	1.343	.363***	1.437
Senior	-.105**	.901	.017	1.017	-.033*	.967	-.010	.990	-.045***	.956	-.059***	.943
Moved-in btwn 95-00	.034	1.034	-.007	.993	-.029***	.972	-.014*	.986	-.011	.989	.032***	1.033
Midwest[1]	.359	1.431	-.428**	.652	-.126	.882	-.536***	.585	1.162***	3.195	-1.877***	.153
South[1]	2.219**	9.198	-.431*	.650	-.056	.945	-.974***	.378	1.686***	5.395	-1.685***	.185
West[1]	3.012***	20.321	-.351	.704	-.977*	.376	-2.874***	.056	3.719***	41.219	-1.579***	.206
Incorporated	-.547	.579	-.012	.988	-.949***	.387	1.067***	2.907	-.401**	.670	1.186***	3.275
Central City	.475	1.608	-.387	.679	-.599	.549	-.162	.850	.163	1.177	-.787***	.455
Constant	-7.144***	.001	2.798***	16.413	4.925***	137.637	3.535***	34.309	-6.317***	.002	-2.746***	.064
N	728		1315		1230		1440		1223		983	
Pseudo R^2 (Nagelkerke):	0.202		0.081		0.259		0.277		0.259		0.265	

[1] Comparison Base: Northeast

*p<0.10; **p<0.05; ***p<0.01

Initiative's impact on policies may come from different directions—citizens may turn their preferences into policies directly by adopting policies through ballot box voting. Moreover, the past citizen practice of ballot box planning or the possibility for citizens to use the ballot box to adopt policies in their favor may shape the policies adopted by councils. For the exclusionary connection observed above from the model results, however, it is difficult to determine whether

this connection is established by citizens' direct employment of ballot box planning or by applying pressure on councils or by a mix of both. Also, the findings do not determine if the exclusionary connection is a reflection of citizen preferences for exclusion or the result of other unobserved factors in initiative communities.

No evidence is found that referendum has connections with exclusionary growth measures, whether low-density-only zoning or mobile home/apartment prohibition, as the coefficients for referendum in these two models are not significant. The models also failed to identify linkage between referendum and two measures having exclusionary potential—permit cap and vote requirement. The coefficients for referendum in these two models are insignificant. However, this may not necessarily suggest the non-existence of exclusionary preference among voters. Referendum works to stop council-adopted policies from becoming effective rather than to propose and adopt new policies. If the council does not pass policies with an exclusionary intention, there is no way for such policies to emerge through referendum, even in cases where voters would prefer to exclude them.

The evidence also indicates that both initiative and referendum decrease the likelihood for a community to encounter management-oriented measures. In the urban containment model, initiative is negatively significant at the 0.01 level, showing a negative influence over the existence of urban containment measures. In the facilities regulation model, the coefficient for referendum is –1.129 and significant at the 0.01 level, indicating that the presence of referendum decreases the likelihood of having facilities regulations. As urban containment and facilities regulations aim at promoting ordered and efficient development rather than stopping growth, the disconnection between initiative/referendum and management-oriented measures suggests the lack of planned efforts to manage growth in either initiative or referendum communities.

Similar to the nationwide models, community status seems to play an important role in the association with growth management measures. The results indicate that the percent of white population is positively associated with permit cap, low-density zoning, urban containment and facilities regulation, but negatively associated with mobile home/apartment prohibition. The evidence does not, however, show that white has a significant connection with vote requirement. Compared with white, income's connection with growth measures is limited. The results show that household income is only positively associated with mobile home/apartment prohibition. Furthermore, the evidence indicates that growth rate does not play a role in contributing to the propensity for having a growth measure.

The role of other control variables also echo those found in the national models. Larger population size or more newcomers who moved in during last five years seem to have a connection with management-oriented measures, while smaller population size or fewer newcomers seem connected with measures having exclusionary potential. For communities with more senior residents, the likelihood of having permit cap, low-density-only zoning, urban containment and facilities regulation tends to decrease. Incorporated jurisdictions tend to be more likely to have mobile home/apartment limitation and facilities regulation, but less likely to have low-density-only zoning or urban containment. Central cities are less likely to have facilities regulation.

A region's influence still presents two interesting patterns—it is most likely to see mobile home/apartment prohibition in the Northeast and then following in descending order the Midwest and the South, while it is least likely to see this measure in the West; urban containment follows exactly the reverse order, most likely in the West and least likely in the Northeast. One change occurs to permit cap—in the national model, communities in the Northeast seem more likely to

have permit cap than in the Midwest; however, in the non-New England model, the Midwest is now no longer significant and permit cap is most likely to be seen in communities in the West and down to the South, and least likely in the Northeast.

5.4.4 Further Analyses

Here similar to the restrictiveness analyses, I tested models without cases from New England states and California. Results are presented in Table 5-12. Also see Appendix F for descriptive statistics, classification tables, and detailed outcomes (Section F.7).

Table 5-12. Relationships between Direct Democracy and Growth Management Characteristics (from models without New England states and California)

		Permit Cap	Vote Requirement	Low Density Zoning	Mobile/Apt. Prohibition	Urban Containment	Facilities Regulations
US	Direct Democracy	+**					-***
	Initiative						+*
	Referendum	+**					-***
Northeast	Direct Democracy				+***		
	Initiative				-**		
	Referendum				+***		
Midwest	Direct Democracy	+**			-**	-**	-***
	Initiative				+***	-***	+**
	Referendum	+**			-***		-***
South	Direct Democracy						-**
	Initiative						
	Referendum						-*
West	Direct Democracy				+*	-**	-*
	Initiative				+*		
	Referendum						

*p<0.10; **p<0.05; ***p<0.01

Here the results are similar to previous findings. The general trend is still that direct democracy shows a positive connection with exclusionary measures. One difference is that direct democracy shows a link to permit cap in the composite model, but this link can only be observed in one regional model—the Midwest model. The results also indicate that this positive

connection can be attributed to the availability of referendum while initiative makes little contribution to this relationship. A connection between direct democracy and mobile home and apartment prohibition measures exists in the Northeast and the West, but an exception from the general trend is that direct democracy is less likely to be connected to mobile home and apartment prohibition measures in the Midwest.

The results indicate that direct democracy has a negative connection with management-oriented measures such as urban containment measures and facilities regulations. In the composite model, direct democracy has a strong negative relationship with facilities regulations. With the exception of Northeast, the negative connection between direct democracy and management-oriented measures exists in all other regions. Referendum seems in large part responsible for this negative connection, while initiative has a positive relationship with facilities regulations but only in the whole model and the Midwest model.

5.4.5 Summary

The findings from these logistic regression models indicate that direct democracy has connections with exclusionary growth management measures and that this connection is realized through the various forms of direct democracy. In the New England region, town meeting communities are more likely to have low-density-only zoning. In the non-New England region, communities with access to initiative tend to be more likely to present mobile home and apartment prohibition measures. Similar relationship can also be found in the Northeast region without New England states and in the West without California. Midwest shows a little difference on this relationship—direct democracy is tied with permit cap but not mobile home and apartment prohibition measures. However, from a national perspective, when pooling different forms of direct democracy into a whole, no connection between direct democracy and

exclusionary measures is found. When excluding New England states and California, direct democracy shows a connection with permit cap.

The evidence also shows that direct democracy communities are less likely to have management-oriented growth measures. In the national models, the findings indicate that communities with access to direct democracy are less likely to have urban containment and facilities regulations. In the non-New England region, initiative communities tend to be less likely to be associated with urban containment measures while referendum communities tend to be less likely to have facilities regulations. The models do not capture any relationship between direct democracy and management-oriented measures in the Northeast, with or without New England states.

Support for the validation of model separation can also be found from the results of these models. Evidence of connections between the forms of direct democracy and exclusionary measures is revealed in the separate models, but not in the national models. Due to pooling together different forms of direct democracy, we may have mixed their varying impacts into a compliant universe and missed the important uniqueness of each tool's impact.

The negative relationship between direct democracy and management-oriented measures may help explain the unexpected findings from the previous section that direct democracy is associated with less restrictive growth management efforts. As growth management restrictiveness is represented by the number of restrictive growth measures, fewer restrictive growth efforts mean a smaller number of growth measures. The disconnection between direct democracy and management-oriented measures indicates that direct democracy communities are less likely to have management-oriented measures such as urban containment and facilities regulation. These measures are least restrictive in the six identified measures because they tend

to promote growth rather than limiting growth. Thus, a smaller number of growth measures may not necessarily represent less restrictive growth efforts. The construction of a more precise restrictiveness index may very well be worth consideration.

Chapter 6. Findings from Case Studies

The overall objective of the case studies is to further examine the influence of direct democracy on growth management policies. My theoretical framework illustrates that due to the unbalanced participation of different status groups under direct democracy in local growth politics, growth management results under direct democracy may be restrictive and exclusionary over the results under representative democracy. The quantitative investigation provides some evidence to support my perception, namely that direct democracy has an association with restrictive, less deliberative and exclusionary growth management efforts. The evidence also indicates that direct democracy facilitates the relationship between community status and adopted growth policies.

However, quantitative analyses cannot account for such detailed information as unique local conditions, informal growth management measures, motivation and actions of interest groups, and the manner in which measures were adopted. Qualitative case studies then become necessary to complement the models. The case study research will probe the growth management adoption process and scrutinize how direct democracy interacts with other factors such as community socioeconomic status and growth and results into growth management. Findings from quantitative analyses are also utilized to serve as the case selection criteria for case studies.

The case studies focus on town meeting communities in the New England region. First, town meeting in the New England region is less focused. Second, town meeting is claimed to be the purest form of democracy and to interrupt the democratic decision making process the least. Town meeting is thus worth focusing on and may generate insights for the relationship between direct democracy and growth management in a straightforward way. It would make a better research to also focus on initiative and referendum use in one of the western states, presumably

California or Oregon, as both of these are heavy users of ballot box planning. However, ballot box planning in the western states, especially in California, has been the research topic in many studies. Thus I leave out these case studies in this research. The case study unit is local municipality.

After examining the survey results, according to the selection criteria,[58] I first selected the following two cases: the Town of Westford and the Town of Chelmsford, both in Massachusetts. See Figure 6-1 for their geographic locations. I then began to systematically collect background materials for these towns. The materials include broader context data, targeted land use policies, and government forms. These data are collected through the US Census; Massachusetts State general laws; local charters and bylaws; town meeting and council minutes; and local and regional newspaper archives. Additional information was collected through telephone interviews and email communications.

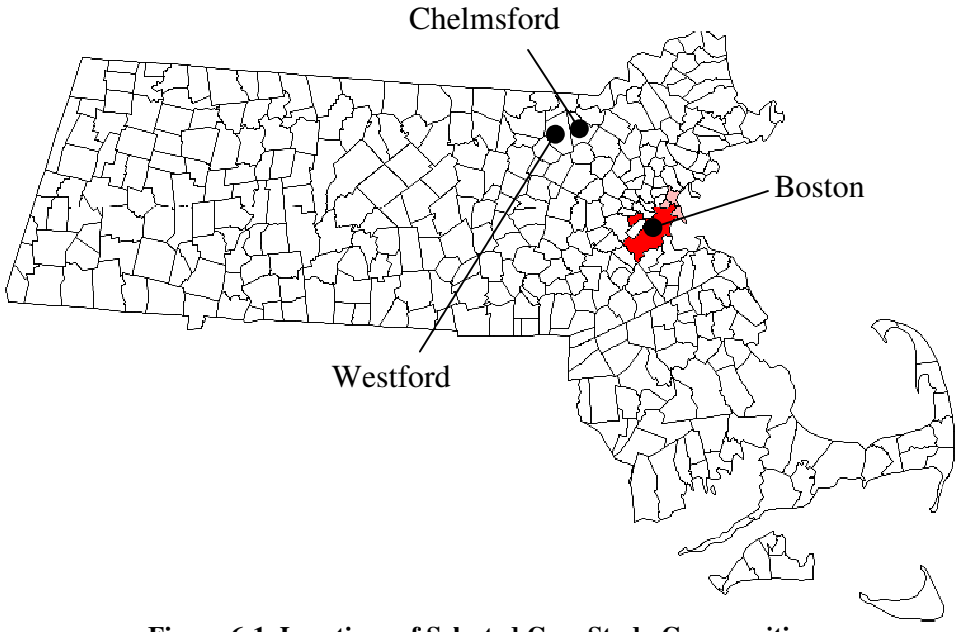

Figure 6-1. Locations of Selected Case Study Communities

[58] See Chapter 4 for a detailed description on the case selection criteria and process, as well as the design for the case study research.

In total, four interviews were successfully conducted. The interviewees include a land-use management director and a selectman from the Town of Westford, and a community development director and a selectman from the Town of Chelmsford. Email communications with clerks, planners and some selectmen also helped in gaining information for the three cases.

6.1 State Context

Massachusetts is the heart of the New England region. It is the most populous of the six New England states, the third most densely-populated state in the US, and has the sixth highest GDP per capita in the US. Massachusetts features two separate metropolitan areas—the eastern Boston metropolitan area and the western Springfield metropolitan area. Approximately two-thirds of the state's population lives in Greater Boston. Culturally, historically, and commercially, Massachusetts has been significant throughout American history. Today the state's economy has been transformed from one based on heavy industry into a service and high-tech based economy.

The state's population has continued to grow in the past few decades, but at a slower pace than the national average. The latest census estimates show that the Commonwealth's population was more than 6.5 million in 2010 and grew by 3.9% since 2000 (5.5% from 1990 to 2000), compared with nearly 10% nationwide. In the portion of the Greater Boston Metropolitan area that is included in my study, the growth trend apparently follows an outward direction from Boston (Figure 6-2).

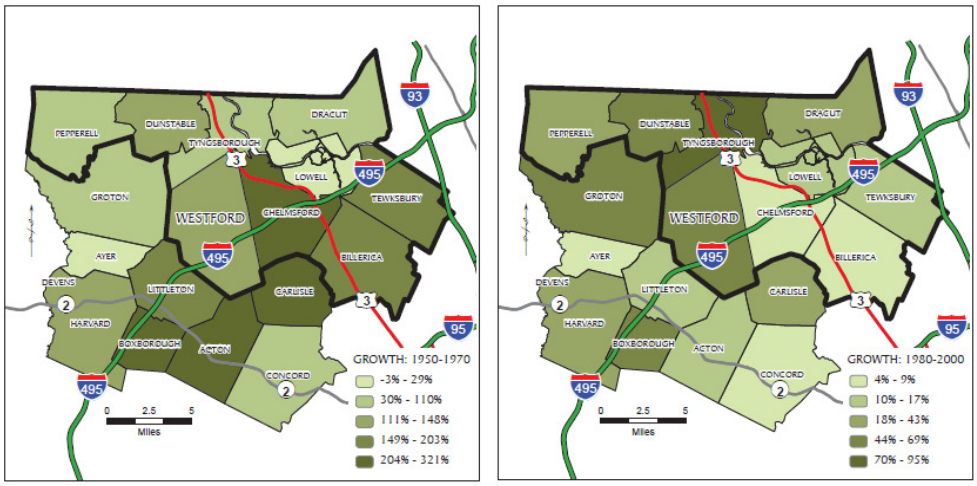

Figure 6-2. Population Growth in Greater Lowell, 1950-2000

Economic downturns may have contributed to the slow pace of growth. Since 1990, the state was hit by two severe recessions, one in the early 1990s and one in 2001. Each of these involved a crash in the state's vital technology sector (minicomputer and dot-com), compounding a real estate bust which was driven by speculative building.[59] Domestic migration has also facilitated the slow growth, but there are a variety of reasons for people to leave the state. According to the Governor's Jobs Creation Commission, most former residents cited high housing costs and a high cost of living in their decisions to leave Massachusetts.[60] Another factor has been the transformation from a manufacturing economy into one based on high technology, leaving limited employment options for lower-skilled workers, males in particular.[61] However, foreign immigration is more than making up for these losses, causing Massachusetts' population to continue to grow according to the 2010 Census.

Massachusetts has a weak state planning framework. There are no statewide plans or planning goals and guidelines. As a strong home rule state, the power to plan and to regulate land use is

[59] http://www.boston.com/business/articles/2008/02/10/recession_looks_more_certain_but_it_may_be_short/
[60] http://www.metrowestdailynews.com/news/x1840140755/Experts-say-housing-costs-schools-key-to-job-creation-in-Massachusetts
[61] Levenson, Michael. Bay state's labor force diminishing. Boston Globe. December 10, 2006. Retrieved 2010-06-05.

left in the hands of municipalities. Planning is basically a response to local needs, especially fiscal considerations, rather than a reflection of state or regional concerns. The state does not require that local master plans be consistent with zoning ordinances, thus the plan may not be translated into local implementation.

However, some state provisions have influenced local planning efforts. Chapter 40A of the Massachusetts General Laws, also known as the Massachusetts Zoning Act, delegates to municipalities the power to zone land uses by permitting and prohibiting various land uses in mapped districts that cover all of the land of a municipality. Chapter 40A also states that city councils and town meetings can adopt or amend zoning laws only by a supermajority, i.e., a two-thirds vote. Zoning regulations are designated as bylaws in towns and ordinances in cities. In Massachusetts, zoning commonly includes lists of activities that can be permitted in each zoning district: the densities at which structures can be built; height of structures; dimensional requirements for lots such as setbacks from property lines and percentages of landscaped or paved land; parking requirements; and procedures for approving permits.

Under Chapter 40A, all municipalities in Massachusetts have zoning codes, but the contents of such codes vary substantially. The majority of zoning codes can be treated as low-density measures from a national perspective. Some researchers claim that these measures have resulted in low-density housing development and have harmed the state's growth (Glaeser, 2011). According to a study by the MIT Center for Real Estate (The Housing Affordability Initiative, 2006), new single-family home development in the Greater Boston region consumes on average 1.3 acres of land per unit. Half of the metropolitan area's new single-family homes were built on lots of 0.9 acres or larger.

Chapter 40B of the Massachusetts General Laws (1969), the "Anti-Snob Zoning Act" has raised concerns that municipal zoning does not allow the market to meet the range of housing needs, particularly for low-income households. This law allows the state to overrule local land-use

regulations for projects in communities where less than 10 percent of the housing stock is affordable. If 20 to 25 percent of the units in a proposed development are subsidized to affordable levels, a developer can propose to build a housing project on land where zoning would preclude residential development. Developers can also propose projects with higher densities than would normally be allowed. In these instances, the state is allowed to override local regulations. Chapter 40B has caused heated controversies since the 1990s in many communities across the state. Some planners and officials feel that Chapter 40B has thwarted local efforts to plan for growth, while others admit the important role Chapter 40B has played in encouraging affordable housing construction in communities where it has traditionally been resisted.

Proposition 2½, Chapter 59 of Massachusetts General Laws also has implications for the planning efforts of municipalities. This proposition was inspired by the California tax limitation law Proposition 13, passed by an initiative petition in 1980 and going into effect in 1982. The law sets a limit of 2.5% for annual property tax increases for all municipalities, but taxes from new development are exempted from this limit. A side-effect of Proposition 2½ is that municipality income will decline in real terms whenever inflation rises above 2.5%. Historically, inflation has been above 2.5% for a significant majority of the years since 1980, thus resulting in a real decline in local tax rates and local spending ability. The Law provides an exception that allows the citizens of each municipality to override the 2½ restriction to address the specific needs of the community, thus giving citizens direct control over their taxation.

Before the middle of the 1990s, most municipalities were able to keep their budgets balanced by offsetting increased expenditures through new growth. Since the middle of the 1990s, however, with local expenses rising faster than the rate of inflation and cutting from state aid in record amounts due to recessions, Proposition 2½ is forcing a growing number of communities

to face limited and difficult options. One of these is to decide between requesting even more money from cash-strapped voters[62] or cutting public services such as policing. The other option is to find other solutions to address the tax shortage[63] and, in most situations, localities fight each other bitterly to attract new industrial and commercial development.

Massachusetts also has a Community Preservation Act signed by its Governor into law in 2000. The Act is a voluntary smart-growth tool that, once adopted, provides a funding source in the form of a surcharge of up to 3% on all property tax bills plus a state matching fund, to be used by Massachusetts communities for open space protection; historic preservation; the creation of affordable housing; and the development of outdoor recreational facilities. To date, 143 cities and towns have adopted the Community Preservation Act and are appropriating funds to thousands of community-based projects and needs.[64] This law is in fact a type of growth management tool and limits the availability of developable land.

Court rulings can also generate statewide influence over local decision-making on growth management. Two cases focusing on local growth control set good examples—*Sturges v. Town of Chilmark* (1980)[65] and *Zuckerman v. Town of Hadley* (2004).[66] In both cases, the towns' growth control bylaws are similar to each other and aim at controlling the residential rate of development by restricting yearly construction. Surprisingly, however, the results are completely different. The court held *Chilmark*'s bylaw constitutional, contending that it is a temporary

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[62] Since 1983, municipalities have requested, via referendum, 4,449 overrides of Proposition 2½, and 1,798 of them have passed. See MA Department of Revenue website at: http://www.mass.gov/?pageID=dorterminal&L=4&L0=Home&L1=Local+Officials&L2=Municipal+Data+and+Financial+Management&L3=Data+Bank+Reports&sid=Ador&b=terminalcontent&f=dls_mdmstuf_prop2levy&csid=Ador

[63] In 2008, for example, a state legislation has given cities and towns the power to tax phone equipment such as telephone poles and wires.

[64] This information was retrieved on May 28, 2011 from the Community Preservation Coalition's website at: http://www.communitypreservation.org/

[65] 402 N.E.2d 1346 (Mass. 1980)

[66] 813 N.E.2d 843 (Mass. 2004)

measure intended to slow growth during the implementation of a comprehensive plan. But in the second case, the court states that the town's growth control bylaw was not adopted to assist in the execution of a comprehensive plan and is inherently in opposition to the public welfare, therefore holding it as unconstitutional. Since the *Sturges* decision in 1980, as many as fifty municipalities have enacted bylaws similar to that at issue in *Sturges* (Rothmel, 2006). However, after the 2004 *Zuckerman* case, many of these growth control bylaws may now be considered unconstitutional, or at least challengeable. The policy decision of one case in this study has already reflected this impact.

Massachusetts has a weak regional planning framework in which there are regional planning organizations such as the 13 Regional Planning Agencies (RPA) and the Metropolitan Area Planning Council in the Greater Boston Region, but these organizations assume entirely advisory roles in regional and local planning issues. In each community, ad hoc groups form quickly in the face of any serious threat to community character. The strength of local groups in influencing local land-use planning can make regional planning difficult, particularly when each community has to adopt unpopular policies such as upzoning in order to meet regional goals. In addition, officials in every locality struggle to maintain reasonable tax bases, particularly in the face of state funding cuts, in order to fulfill the escalating demands for high-quality public services. This reality also tends to make regional cooperation difficult.

There are no county governments above the two selected cases, therefore there is no county influence over local growth management. Massachusetts, by law, and mainly due to indebtedness, began to allow county governments to dissolve beginning around 1997, mostly for the purpose of saving costs. The State has abolished eight of its fourteen county governments, leaving five counties with county-level local government and one with combined county/city

government. Vestigial judicial and law enforcement districts still follow the old county boundaries, and the abolished counties are still generally recognized as geographic entities if not political ones.

Massachusetts has two types of local governments—towns and cities. Municipalities can decide whether to have a city or town form of government, but towns with less than 12,000 inhabitants cannot adopt a city form of government. All cities have a council form of government, while towns have either town meeting or town council forms of government. There are two types of town meeting—open town meeting and representative town meeting. Towns with fewer than 6,000 inhabitants must have an open town meeting, while towns with more than 6,000 inhabitants may adopt either form of town meeting at their discretion. In 2008, of the 298 towns in Massachusetts with a town meeting form of government, 261 have open town meeting and 37 have representative town meeting. Towns are permitted to convert between these two types of town meeting. One of the cases in this study, the Town of Chelmsford, was the latest town to change from open town meeting to representative town meeting in 1989. Conversely three towns that had representative town meeting—Athol, Seekonk and Webster—have reverted to open town meeting.

Cities and towns in Massachusetts can take steps to shape development through mechanisms such as zoning and subdivision control, but regulation is not the only tool available to influence a community's future land-use pattern. Infrastructure and utilities, open space acquisitions, and organizational tools such as local development corporations or special districts also have a pervasive impact on private investment decisions. Furthermore, while it is tempting to focus all major growth management policies on the fate of vacant land, it would be a mistake to overlook the role that redevelopment plays in a community's economy and visual character.

6.2 Town of Westford

Figure 6-3. The Westford Town Center

Westford is a suburban town in the Greater Lowell metropolitan area[67] in Middlesex County, a member community of the Northern Middlesex Council of Governments.[68] Westford is about 30 miles northwest of Boston and is also part of the Greater Boston metropolitan area. The town is bordered by Chelmsford to the east, Tyngsboro to the north, Groton to the west, Littleton to the southwest, Acton to the south and Carlisle to the southeast. Interstate Highway 495 runs through the southern part of the town, and US Route 3 runs through the town's northeast corner (see Figure 6-4). The population was 21,951 at the time of the 2010 Census and the total area within the town boundary is 31.33 square miles. The town was first settled in 1635 but not officially incorporated until 1729.

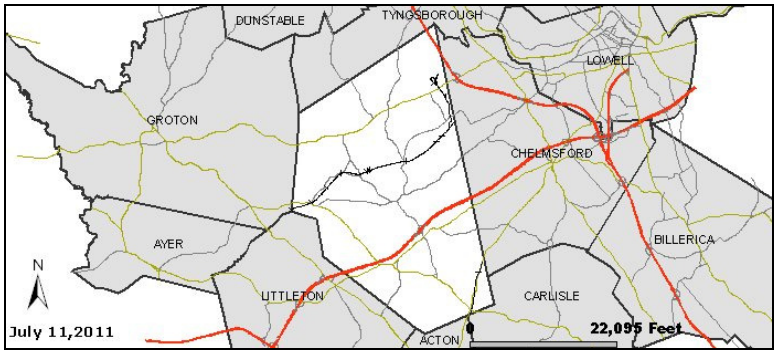


Figure 6-4. Location of Westford

[67] Suburban sprawl and serious economic hardships have reduced the role Lowell plays in its suburbs over the decades. Today, Lowell is not the economic center it once was, but it is still a cultural and institutional center for the region.

[68] The Northern Middlesex Council of Governments is one of the Regional Planning Agencies (RPA) in Massachusetts and includes 9 communities in the Greater Lowell metropolitan area.

In its early history, Westford was a rural town with rolling hills, lakes and apple orchards. During the nineteenth century, the textile industry boomed in this region and Westford was noted for its wool mills. However, after World War II, the textile industry in this region collapsed rapidly and Westford experienced a few decades of stagnation. The town began its technology development in the 1960s. With the advent of the 128 Technology Belt, increased development pressure from Greater Boston and the proliferation of automobile commuters pushed development outside of Route 128 to Interstate 495 and up Routes 3 and 93 into southern New Hampshire. By the 1970s, Westford began to act as a suburb for high-tech firms located in nearby areas, and later became a center of technology itself. By the 1990s, Westford was home to many high-ranking technology firms, most located along Route 110 and running parallel to I-495. Today, Westford's agricultural past has given way to rapidly-expanding high technology industries, suburban retail, and upper-middle class residential areas.

Figure 6-5. The Westford Town Hall

6.2.1 Local Conditions and Growth

Westford's water resources and its direct access to major transportation routes have influenced its land-use pattern in noteworthy ways, both historically and since the town adopted its first zoning bylaw in 1955. The town was developed from six individual urbanized villages,

each with a distinct character and surrounded by low-density suburban residential development. Major commercial and industrial developments are concentrated along the Route 110 area and the adjacent Route 3 area. The remaining areas of the town are large open spaces, forestland and agricultural land. See Figure 6-6.

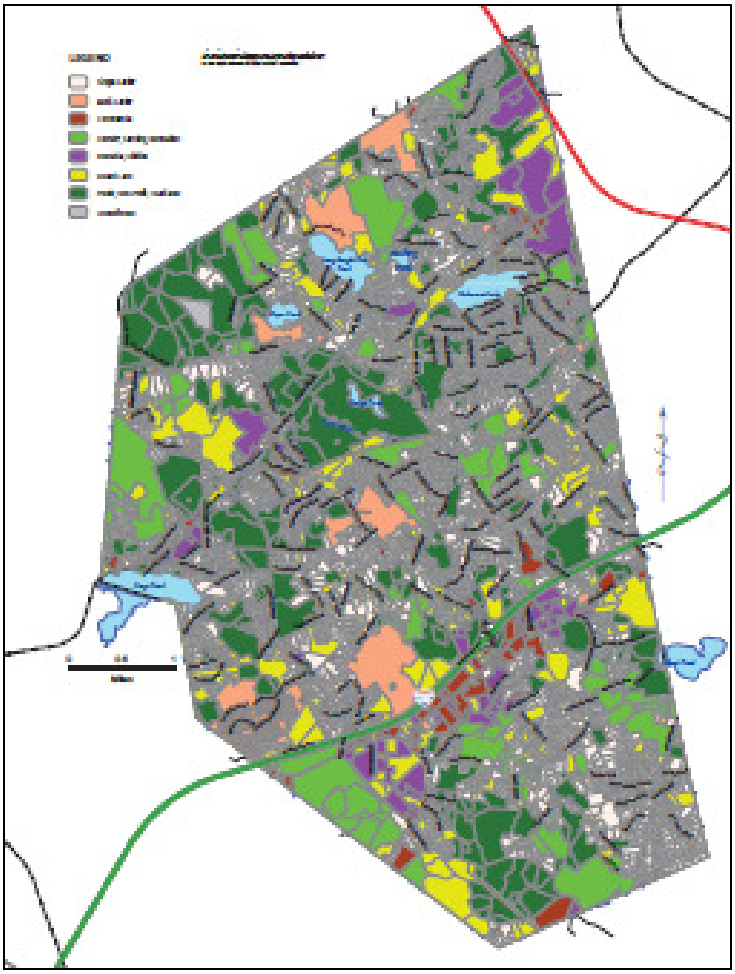


Figure 6-6. Current Land Use in Westford

Westford's six villages evolved in association with different aspects of the town's history: mill construction along a water sources; seasonal recreation on the lakes and ponds; transportation patterns; and agricultural development. Today, the villages are not as clearly defined as they once were because much of the surrounding land has been subdivided. However,

they still contribute significantly to Westford's visual identity. Five of the six villages are listed on the National and State Registers of Historical Places.

Westford's residential development has a close connection with industrial and commercial development within the town and in nearby communities. From the 1960s to the middle of the 1980s, industrial development such as high-tech firms and office parks found their place along I-495 and Routes 3 and 93. As Westford began its development, it provided housing and commercial needs for those companies' commuters, and condominium development was intensified during the first half of the 1980s. Beginning in the middle of the 1980s through the 1990s, industrial and commercial development grew exponentially in the town, with large-scale office parks and single-family housing development prevailing, especially during the 1990s. Since the middle of the 1990s, Westford has made stringent planning efforts to limit rapid residential growth, resulting in slow growth during the last decade. The population growth rate from 1990 to 2000 was 26.3%, but from 2000 to 2010 this number dropped sharply to 5.8%. However, after some of the growth-limiting measures expired, and coupled with the Chapter 40B provisions, housing development has again been experiencing a growth spurt in recent years, especially for condominiums.

Land use change can reflect the growth pattern described above. See Table 6-1 for land use change in Westford. The high percentage of change in both industrial and residential uses from 1985 to 1999 reflects the rapid growth in industrial and housing development. The stagnation of both types of land use change in the subsequent 1999 to 2007 period shows the effects of restrictive growth management measures having been adopted. The continued commercial development in this period may be a reflection of Westford's efforts to remedy the tax shortage caused by rapid residential growth in the previous period. In total, about 40% of the town's land

had been developed by 2007. However, the data only represents broad classifications of land use and do not reveal fundamental transformations that occurred as Westford continued to grow. For example, considering all residential use types, more than 4,100 acres were converted to housing between 1971 and 2007, and over half of all residential land use changes occurred between 1985 and 1999. However, the data does not show that this period included two cycles of intense housing growth: one prior to the recession in 1991 and the other after 1994.

Table 6-1. Land Use Change in Westford, 1971-2007

Land Use	Acres in Use				Percent Change			% Town 2007
	1971	1985	1999	2007	1971-1991	1985-1999	1999-2007	
Commercial	71.2	137.9	180.7	217.3	94%	31%	20.30%	1.10%
Industrial	477.6	572.8	996.5	992	20%	74%	-0.50%	4.90%
Residential	2,504.6	3,642.9	6,215.5	6,562.7	45%	71%	5.60%	32.70%
Other	17,013.7	15,713.5	12,674.4	12,295.1	-8%	-19%	-3.00%	61.30%
Summary								
Developed	3,052.4	4,353.7	7,455.4	8,114.3	43%	71%	8.80%	40.40%
Undeveloped	17,013.7	15,713.5	12,611.7	11,952.8	-8%	-20%	-5.20%	59.60%
Total	20,067.1	20,067.1	20,067.1	20,067.1	NA	NA	NA	NA

Sources: For 1971, 1985 and 1999 data, UMass-Amherst, MacConnell Land Use Maps, MassGIS; for 2007, Westford GIS, aerial photogrammetry analysis. Data supplied courtesy of NMCOG.

The large-scale development in the 1990s caused two major impacts on the community. First, large projects have often had a detrimental impact on the landscape of the town. As many have claimed, Westford has been losing its traditional scenic and country atmosphere. It "is now resembling any other town on the 495 strip that looks like a good place to stop briefly and then head out - the industrial parks seen from the road are also less than charming" (Westford: 2007 Planning Survey). Second, the rapid growth placed heavy pressures on the town's ability to provide public services and infrastructure such as schools and new roads. The tax-limiting Proposition 2½ and record cuts in state aid put the town's budgeting situation in even a greater quandary. As a result, local property taxes increased sharply. During the rapid growth period

from the late 1990s to 2007, Westford's average tax bill has increased by more than 85% in current dollars, and 24% in constant (2006) dollars.[69]

The public school issue is among the most concerning in the town's growth dilemma. Westford has a prestigious public school system, consisting of nine public schools and an integrated preschool facility. Since the middle of the 1990s, the town had been forced to build or renovate six of the schools to accommodate the children from all the new residential development. See Table 6-2 for the rapid increase in school enrollment from 1994 to 2004. This information also serves as testimony to the town's significant growth during that period. Property tax levies, along with other local receipts, account for more than 90% of all school expenditures in Westford.[70] Schools were the most important factor leading to the sharp fluctuation in property tax rates in Westford.

The costs of new road construction and nearby transportation improvements for new projects are in many cases at least partially borne by development. Other public services such as small-scale neighborhood parks have also been transferred onto the shoulders of developers. For example, as a negotiation result in the Greystone Estates project, the developer agreed to make improvements to the intersections surrounding the project as well as including within the project a 3-acre park with a baseball diamond, a tennis court, two basketball courts, and trails. Upon completion, the agreement included the transfer of the park to the town.

Because the town is not engaged in providing sewer and water services, the conflicts between development projects and sewer and water service providers have often found a compromising stand in the town. The town provides public water for some areas but does not provide the sewage system. In Westford, approximately 75% of town residences and 90% of businesses are

[69] Massachusetts Department of Revenue, "Average Single-Family Tax Bill," 1988-2007; Community Opportunities Group, Inc.
[70] Various grants and federal aid sources provide support for the balance of total school spending.

serviced by the public water system. The pumping capacity of the eight municipal wells is 3,580 gallons per minute. For the fiscal year 1999, 1.764 million gallons of water was used per day on average. As public sewerage is not available in Westford, all waste treatment must be handled on site.

Table 6-2. Enrollment Growth, FY 1989-2009, Westford Public Schools

Fiscal Year	Grade Levels					Percent Change
	PK-3	4-6	7-9	10-12	Total	
1988	879	585	679	652	2,795	
1989	957	588	647	638	2,830	1.30%
1990	970	625	605	648	2,848	0.60%
1991	1,017	661	607	644	2,929	2.80%
1992	1,029	683	594	655	2,961	1.10%
1993	1,070	704	649	607	3,030	2.30%
1994	1,146	756	701	618	3,221	6.30%
1995	1,153	806	746	609	3,314	2.90%
1996	1,254	875	773	654	3,556	7.30%
1997	1,398	892	783	679	3,752	5.50%
1998	1,473	927	828	702	3,930	4.70%
1999	1,486	973	898	728	4,085	3.90%
2000	1,609	1,078	953	766	4,406	7.90%
2001	1,609	1,107	999	830	4,545	3.20%
2002	1,622	1,164	999	900	4,685	3.10%
2003	1,677	1,197	1,103	948	4,925	5.10%
2004	1,719	1,244	1,149	1,000	5,112	3.80%
2005	1,645	1,271	1,206	1,011	5,133	0.40%
2006	1,631	1,266	1,245	1,074	5,216	1.60%
2007	1,608	1,262	1,241	1,123	5,234	0.30%
2008	1,614	1,239	1,268	1,163	5,284	1.00%

Sources: Massachusetts Department of Education, "Long-Term Trends in PK-12 Enrollments, Westford Public Schools," <http://finance1.doe.mass.edu/statistics/>.
**Enrollment counts are based on conditions as of October 1 each year. For example, FY 2009 refers to enrollments reported by DOE for October 1, 2008.*

After years of growth, Westford today has become a high-end suburban bedroom community. A large portion of the town's land is residential. In 2007, a total of 7,438 acres of land, or 42% of the town's total land, was devoted to residential use (see Table 6-3). High-quality industrial and commercial land took up only 1,419 acres, less than 8% of the town's total land. The majority

type of housing is single-family dwelling, with 6,635 acres of land devoted for this purpose, which is close to 90% of total residential land and 37% of the town's total land. Condominiums occupied 633 acres, about 8.5% of residential land use. Two and more family dwellings only captured a minimal 160 acres, which is little more than 2% of residential land use.

Table 6-3. Land Use in Westford, 2007

Class of Use	Acres	% Total	Class of Use	Acres	% Total
Residential			**Industrial**		
Single-family dwellings	6,635	37.33	Manufacturing, R&D	403	2.27
Two-family dwellings	115	0.65	Mining, Quarries	377	2.12
Three-family dwellings	18	0.10	Salvage	70	0.39
Multi-family dwellings	37	0.21	Public Utilities	90	0.51
Condominiums	633	3.56	**Total**	940	5.29
Total	7,438	41.85			
Commercial			**Mixed Uses**		
Hotels, Nursing Homes	36	0.20	Predominantly Residential	91	0.51
Commercial Storage	13	0.07	Predominantly Commercial	41	0.23
Retail, Restaurants	98	0.55	**Total**	132	0.74
Auto-Related Uses	28	0.16			
Banks, Offices	117	0.66	**Chapter 61, 61A, 61B**	1,927	10.84
Services	21	0.12			
Commercial Recreation	166	0.93	**Privately Owned Vacant Land**	2,482	13.97
Total	479	2.70			
			Public, Non-Profit, Charitable	4,375	24.62
Total	17,773	100.00			

Sources: Westford GIS Department, FY07 Assessor's Database; Community Opportunities Group, Inc.

Westford has very little economic or racial diversity, mainly due to its limited housing choices and high housing costs. Its housing inventory has become less diverse, and detached single-family homes have clearly been Westford's mainstay for a long time. From 1990 to 2000, the town's total housing inventory increased by more than 1,400 units (Table 6-4), making Westford one of the state's top thirty communities for rate of housing growth. Most of the increase reflected new single-family home development. Since 2000, market demand for multi-family and townhouse condominiums has intensified, though not to the degree that Westford experienced in

the early to mid-1980s. By 2007, the town had approximately 7,570 housing units, while detached single-family housing accounted for 87%.

Table 6-4. Housing Units in Westford, 1990-2007

Housing Type	1990	2000	Change	2007	Change
Detached Single-Family	4,772	6,161	1,389	6,558	397
Attached Single-Family or Multi-Family	489	574	85	802	228
Two-Family	199	184	-15	184	0
Other	74	22	-52	22	0
Total	5,534	6,941	1,407	7,566	625

Sources: Bureau of the Census, Claritas, Inc., and Community Opportunities Group, Inc.

As Westford has grown, it has attracted affluent homebuyers who can afford the municipal and school services they expect from the town. In 2006, the median single-family home sale price and the median condominium sale price were $425,000 and $350,000 respectively, substantially higher than the state equivalences of $312,000 and $261,750 respectively.[71] Moreover, according to the 2000 census, 38.4% of owner occupied householders were newcomers (moved-in between 1995 and 2000). Based on a recent survey conducted by the town, two-thirds of local residents are commuters working outside of the town. A challenge for Westford is that the economic position of newer households often differs from that of long-term residents.

Today, Westford is described as a traditional, affluent and prestigious community with a socioeconomic status far above the state average (see Table 6-5). In 2007, a majority of the population (90%) was white, subtantially higher than the state average (78.9%). More than a quarter of its age 25+ population held graduate degrees, almost double the statewide percentage (13.5%). Its per capita income was $48,788, one-and-a-half times the state level, and its median household income was $124,514, more than twice that figure statewide. The town's family

[71] The Warren Group: http://www.thewarrengroup.com/portal/Solutions/PressReleases/tabid/190/newsid751/39/Default.aspx

tradition was reflected in that its family-related statistics were much higher than the state average. In 2007, among its total households, 85.3% were families, 76.4% were married couples, and 51.7% were families with children. Among occupied housing units, 92.0% were owner occupied according to the 2000 census. See Appendix G for more statistics of Westford.

Table 6-5. Demographic Comparison: Westford and State, 2007

	Westford	State
2000-2007 Growth Rate		
Population Growth	3.90%	0.70%
Household Growth	5.10%	2.10%
Population		
Median age	37.8	38.2
% White, non-Hispanic	90.00%	78.90%
% Graduate degrees	25.40%	13.50%
Per capita income	$48,788	$31,364
Labor force participation rate (civilian)	75.60%	66.30%
Households		
Average household size	3.00	2.48
Median household income	$124,514	$60,331
Household income>$250,000	10.20%	3.10%
Families		
% Family households	85.30%	64.70%
% Married couples	76.40%	49.30%
% Families with children	51.70%	33.10%
Median family income	$133,709	$74,948
% Families below poverty	1.80%	6.90%

Sources: Claritas, inc., Community Opportunities Group, Inc.

The dominance of single-family dwellings as well as rising housing costs has made negative impacts on certain Westford residents. While affluent newcomers may enjoy the high quality of living and public services, long-term residents, especially seniors and young graduates, may not be able to afford the living costs any longer and may be forced to relocate. Some respondents to the town's 2007 survey even called Westford a "snob town." This result is underscored by the

2010 census which shows that seniors (65+) account for only 9.9% of the population, which is lower than the state average of 13.6%.

6.2.2 Growth Politics and Open Town Meeting

There are two central themes found in Westford's growth issues—fiscal impact and community character; these two themes shed different lights on fractions of the local residents. The fiscal impact considers the balance between revenues received from development, mainly through property tax collection and public service provision centered on public schools. Community character refers to the maintenance of a small town atmosphere with peaceful living conditions and large open spaces and agricultural land. The two most visible fractions[72] of the town's residents are newcomers and long-term residents, mostly seniors and young graduates, as suggested in the previous section.

The fiscal impacts of growth on newcomers and long-term residents brought similar results but generated different reactions. Growth in Westford has driven up the local property tax rate. A community generally needs to provide a comprehensive range of services and infrastructures to support growth and include road, sewer, water, library, school, police, fire protection, and recreation facilities. In Westford, the controversial item has always been public schools due to the town's limited capacity to accommodate new students. The rapid growth in the 1990s resulted in the construction of new schools and led to dramatic increases in tax bills. The newcomers tended to be wealthy and were able to absorb the higher taxation even though they were discontented. However, the tax increase became a heavy burden for the long-term residents, especially income-constrained retired seniors and the young graduates who were seeking

[72] I do not use the term "group" here because they did not form any organized groups—the later use of "group" is onlyt for my convenience of description and analyses.

employment. For them, the result of higher taxes could be that they are forced to move out of their hometown.

The destructive nature of growth on community character also receives similar reflections from the two groups of residents but to varying extents. Newcomers came to Westford seeking its natural beauty and country atmosphere, and they were willing to pay a higher price as reflected in the high level of property tax in order to enjoy this character. The loss of this character may raise serious concerns among newcomers and could lead to their mobilization to protect this character or their possible decision to leave this community. Long-term residents also want to keep the familiar and joyful environment in which they grew up, but this preference would have a lower priority when compared to the threatening tax increase. Another reason for the low rank of community character by long-term residents could be that preserving open space is not free. It could also mean a rise in tax levies to cover the fund for open space purchase and protection.

However, there have been few organized efforts concerning the town's growth issues, either from inside or outside the town. Neighboring jurisdictions have little influence over Westford's growth and politics. The political power of the town resides in the hands of individually-registered voters. The voters pursue their interests through direct participation in town meeting and volunteering for Westford town boards and committees.

The town's form of government and power distribution are determined by its home rule charter. The present charter was adopted in 1989 and amended in 1992. It provides for an open town meeting, a five-member board of selectmen and a town manager who serves as the chief administrative and financial officer of the town. In addition to the board of selectmen, Westford's charter provides for election of the town moderator, school committee, planning

board, housing authority, library trustees and board of health. Nearly all other boards, committees, and statutory town officers are appointed by the selectmen or town manager, although the moderator also has some appointment powers.

Town meeting is the legislative branch of Westford's government with two primary responsibilities: establishing an annual budget by voting to appropriate funds for all town departments, and voting to adopt or amend the town's local statutes and bylaws. The following detailed town meeting procedures are defined by the town's general bylaws. Westford's annual town meeting is usually held on the first Saturday after the first Tuesday in May. If additional matters come up at a later time, a special town meeting can be called, either by the board of selectmen or by citizens' petition. All registered town voters can attend, speak and vote at the open town meeting. However, no absentee voting is allowed and all voters must attend in person. Non-registered voters may attend the meeting as observers.

There are some concerns about the town meeting in Westford. First, the voter attendance rate is fairly low. According to a selectman, about 200 registered voters generally participate in the town meeting. This number could not even satisfy the special town meeting quorum requirement. This complies with Bryan's (2004) observation from his research on Vermont's town meeting. A town meeting participant expressed his discontent after a meeting session as follows:

> Of course the whole town meeting is a joke. Only 200 people out of a town of 20,000 show up. Most of the 200 just go along with whatever is proposed. The rest of the town is so apathetic with this process. They don't even get involved.

Many factors contribute to the low attendance, including voter apathy or satisfaction; lack of communications between voters and the town government on town meeting issues; the meeting's date and schedule conflicts with other events; or voters' obligations to other things. It is simply not realistic for a busy father or mother to voluntarily sit in the Town Hall for 8 hours on Saturday facing a long list of complicated articles, according to one of the town's planners.

Second, town meeting participants may not be representative of the entire town. The low attendance may result in representative bias, as the likelihood that a small sample is not random becomes much higher. Indeed, this is a potential problem in Westford—most of the participants in town meeting tend to be from the same flock, one that consists of senior and long-term residents. Of these participants, some arrive ill-prepared and during the proceedings become confused and alienated, convinced that town officials have a hidden agenda. Some comment on the attendees, asserting that they "do not fully understand town meeting warrant articles and in most cases they just cast their votes randomly." Other voters arrive well-prepared and become frustrated with the pace and the process, convinced that town officials are incompetent planners.

Third, the town's voter blocs may be "stacking" meetings for specific warrant articles. When a controversial article on the warrant comes up for discussion, the town meeting floor is often suddenly flooded with voters who have been notified by cable TV or cell phones and who vote as a bloc for or against the controversial article, then just as suddenly disappear before the next article is taken up. This stacking of town meeting angers not only those voters who voluntarily endure the entire meeting, but also the voters who failed to organize their own bloc to back the opposing view. In fact, stacking may not be a problem since it is a democratic option available to all voters on all sides of a controversial warrant article.

Last but not least, the meeting itself may change some participants' voting behavior, especially those voters in the minority. These voters may be persuaded by majority decisions to both psychologically and emotionally re-think their decisions and the potential results associated with their votes. As a result, they may change their votes or even forgo their right to vote. This influence may discourage minority voters' attendance in the future and leads to lower attendance rates and an even higher level of non-representativeness within the town meeting.

Westford has long recognized these problems and has even created a committee to evaluate a resolution to replace the open town meeting with a representative town meeting. After one year's work, the committee presented a negative result, largely due to voters' opposition. According to their report, voters "feel that exchanging OTM for RTM will only exchange one set of problems for another and would actually lead to a loss of representation—their representation. … Others suggested that the 200 elected [representative town meeting] representatives would likely turn out to be the same 200 voters who sit through to the end of TM now." Surprisingly, the strongest support for a representative town meeting came from town managers who "liked dealing with a relatively static group of TM representatives whose response on an issue could be predicted and prepared for."

6.2.3 Growth Management

Westford presents restrictive growth management efforts consisting of a well-developed system of planning and land use regulations. The management efforts can be divided into three layers: the comprehensive control; the pace control; and the spatial distribution control. The three layers complement each other and function as a system to prevent undesirable growth. In the town's growth management measures, the density regulation and mitigation provision of the zoning bylaw, the building permit cap, and the Community Preservation Act (CPA) play important roles in limiting growth and causing Westford's growth management to be restrictive.

6.2.3.1 Comprehensive Control/Low-Density-Only Zoning and Fiscal Impact Review

The first layer is comprehensive growth management, including a comprehensive plan (2009); zoning use and dimension control (zoning was originally adopted in 1955 and recently amended); a subdivision regulation (2004); and a site plan regulation (2007).[73] The

[73] The Massachusetts Zoning Act does not specifically authorize site plan review, but the courts have upheld it as a valid exercise of zoning authority, and most communities have some type of site plan review procedure.

comprehensiveness of the effort in this layer is reflected in that all these measures apply town wide and to all types of development. As Massachusetts does not mandate that the comprehensive plan be consistent with zoning, many of the plan's contents are not reflected in the implementation procedures. Thus, as regards this layer, I put my focus on the zoning bylaw.

Westford's zoning bylaw features a low-density-only minimum lot requirement. There are two types of residential districts, RA and RB, in the zoning bylaw. In RA and RB districts only, single-family use is permitted by right, while other residential uses such as multifamily (including townhouse condominiums) and accessory or in-law apartments are allowed by special permit. Mobile home and apartment uses are prohibited. Uses other than residential are basically not allowed in RA and RB districts. A supermajority vote is required on all rezoning issues. The minimum lot requirement for RA is 40,000 square feet, equivalent to about one unit per acre, and for RB the minimum lot requirement is 20,000 square feet, barely two units per acre. Although the zoning codes in Massachusetts' communities tend to impose low-density regulations, the two units per acre requirement in Westford's zoning bylaw still falls into the lowest categories of density limitation.

The zoning bylaw has a mitigation provision, added in 2005, under which the town requires fiscal impact review on all projects. The fiscal impact review is an independent evaluation of the proposed development's fiscal impact on the town's municipal services. Under this provision, and based on the fiscal impact evaluation, town review boards may impose reasonable conditions requiring developers to design and construct offsite improvements to municipal facilities,[74] such as roads and intersections.

While the zoning itself was the result of the state Zoning Act, its low-density requirement was a reflection of the rural character of the town as well as the lack of a sewer system when the

[74] Massachusetts General Laws do not allow local governments to collect impact fees from developers.

bylaw was adopted. Under growth pressures, many jurisdictions have increased the density ceilings which are limited in their zoning codes through an upzoning process.[75] However, the low-density regulation functions by residents' preferences[76] in Westford, and no individual or group has ever made efforts to challenge it. Consequently, the town has kept the density regulation in its zoning bylaw as it was adopted five decades ago.

Westford's zoning bylaw indicates a tendency for exclusion of the low- and moderate-income residents and minorities. According to studies in this respect, the low-density-only requirement may restrain affordable housing production, increase housing sale price, and result in the exclusion of the poor and minorities. As the owners or renters of mobile homes and apartments tend to be low- and moderate-income people, prohibition of these units may also result in exclusion. Indeed, the trend of newcomers with higher income and the difficult situation of economically disadvantaged long-term residents during the town's development reflect this tendency and the zoning bylaw may have made at least a partial contribution to it.

6.2.3.2 Pace Control/Growth Rate Limit and Scheduling

The second layer is growth pace control. Its most important component is the growth management provision contained in the town's zoning bylaw, which provides a general growth rate limit and a development scheduling for certain projects. The purpose of the provision was to ensure that "growth occurs in an orderly and planned manner, at a rate that can be supported by town services, while avoiding large year-to-year variations in the development rate," and further to "relate the timing of residential development to the town's ability to provide adequate public safety, schools, roads, municipal infrastructure, and human services at the level of quality which

[75] http://www.masshousingregulations.com/dataandreports.asp
[76] In the 2007 planning survey, only one-quarter of respondents replied that they agree the town's zoning should allow less than one acre lots for new single-family development.

citizens expect, and within the town's ability to pay under the financial limitations of Proposition 2-1/2."

The provision contains two parts. The growth rate limit is set at 30 new dwelling units per calendar year[77] and that the building inspector may issue up to six building permits to any individual development. The development scheduling regards projects with dwelling units for senior residents and reduced-density projects with a minimum of 25% reduction in permitted density; the planning board issues special permits for these projects at their discretion. Affordable housing, redevelopment projects, and accessory units were exempted from these provisions.

The provision was first adopted in 1996 under a background of rapid growth. Since the middle of the 1990s, several large-scale residential projects have been under development. They presented a heavy burden on local public services, especially schools. In 1995, the town proposed a town-wide moratorium in order to temporarily stop the rapid growth and allow time for studying the impacts and solutions. However, the town meeting turned down this proposal. In 1996, a local activist presented the growth management measure and successfully added it into the town meeting warrant. The measure was later approved by the town meeting.

After several amendments to the provision's expiration date, the last version stated that the provisions "shall expire on May 11, 2009; however, by vote of Town Meeting before said date, the provisions…may be extended for an additional five years." In the 2009 annual town meeting, an effort was made to extend the provision for one more year but failed for lack of a majority. This result may indicate voters' concerns regarding possible litigations on future projects due to

[77] When the provision was adopted in 1996, it set a growth rate limit on new dwellings to 30 units per calendar year. In 2000 the capped number was amended to 12 units per year, but in 2002 the number reverted to 30 units per year.

the threatening impact from the Massachusetts State Supreme Court's decision on the *Zuckerman v. Town of Hadley* (2004) case.

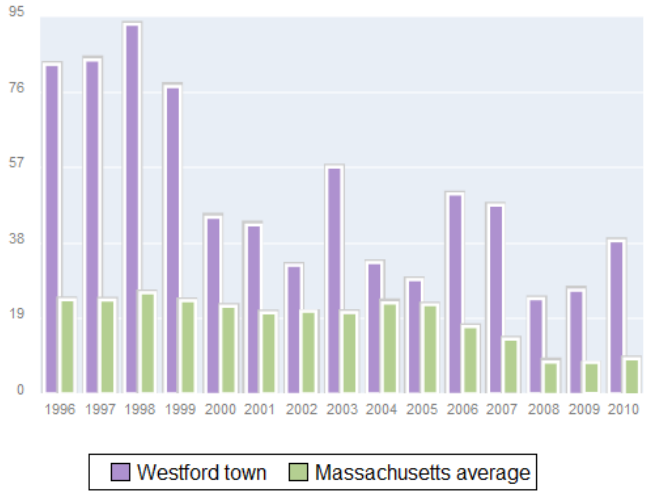
On the other hand, the decision might also be related to the enhanced capacity to support a moderate growth. Taking the most important school issue as an example, Westford's school buildings have the capacity to absorb enrollment growth. Table 6-6 compares enrollments in October 2007 to the planned operating capacity of each school in Westford. It shows that most school buildings have room to accommodate enrollment growth.

Table 6-6. Designed Capacity and Student Enrollment, Westford Public Schools (2007)

Name of School	Planned Operating Capacity	Enrollment 10/1/07
Blanchard Middle School	750	597
Crisafulli School	528	416
Westford Academy	1,750	1,580
Integrated-Pre School	75	74
Abbot School	484	386
Stony Brook School	750	670
Robinson	484	380
Norman Day School	506	403
Miller School	528	422
Nabnasset School	462	369

Source: Westford School Department, November 2007.

The pace control provision may have been effective by reducing building permit issuance as a general trend. Figure 6-7 shows the number of single-family housing permits issued from 1996 to 2010 in Westford. The largest number (193) issued occurred in 1998 and the smallest number (50) was observed in 2008. Even though there was fluctuation in the permit numbers for specific years, the general trend of permit numbers went downward. Although every year's number was larger than the 30-unit growth rate limit, this can be attributed to the exemption for affordable housing and the planning board's discretion in special permit issuance.



Source: http://www.city-data.com/city/Westford-Massachusetts.html

Figure 6-7. Number of New Single-Family Permits per 10,000 Residents

6.2.3.3 Spatial Distribution Control/Community Preservation Act

The third layer is the control of geographic, or spatial, distribution of growth within the town. This effort is expressed as two approaches—the "pull" approach, directing certain types of growth into certain areas, and the "push" approach, prohibiting development in certain areas. The pull approach includes two special districts defined in the zoning bylaw—the senior residential multifamily overlay district and the historical mill conversion overlay district. The aim of these two districts is to encourage the development of multifamily and affordable units as well as redevelopment or the conversion of old structures. The push approach is represented by the Community Preservation Act and a few overlay districts in the zoning bylaw with for the purpose of natural environment protection and the conservation of the town's landscape. Of these measures, the CPA is the most active and effectively limits growth by setting aside large parcels of open space.

The Community Preservation Act in Westford was adopted in 2001 immediately after the Act was signed into law by the state's Governor in 2000. On March 2001, the board of selectmen voted for an action to include the act as an article in the town meeting warrant. In the May town

meeting, the act was passed by a 65% vs. 35% margin. The CPA created a local community preservation fund for open space protection, historical preservation, affordable housing provision, and outdoor recreation improvement. The fund collects a property tax surcharge of 3%, the highest level allowed in the CPA, with exemptions for low income households and the first $100,000 of assessed value. The State provides a 100% matching fund to the CPA, partially as an incentive for local jurisdictions to adopt the CPA. The 100% distribution lasted until 2008 and then this percentage began to decrease over time before reaching about the 30% level in 2011, largely due to the impacts of recent recessions on the state budget.

Under the act, Westford also created a Community Preservation Committee consisting of 8 members in charge of the community preservation fund. The committee makes recommendations to the town board on the distribution of CPA funds among various projects. Their recommendations follow the state requirement that in every fiscal year the CPA fund should be spent or should set aside no less than 10% for open space, historical conservation, and affordable housing respectively. In fact, CPA funds have played an instrumental role in Westford's acquisition of large open space parcels. For example, using the CPA fund, the town purchased the EBC property, a significant tract of open space that offers many passive and active recreation opportunities as well as protecting the property from large-scale development.

CPA has been under challenge. Using a case study approach, Dillemuth (2007) asserts that CPA funds have primarily been designated to preserve existing affordable units, while very little CPA funding has gone to create new units. Also, she finds that the presumably equitable distribution of CPA resources in its first five years misrepresents affordable housing because of Cambridge's disproportionately high allocations in that area.

6.2.3.4 Growth Management under Open Town Meeting

In this section, I focus on two measures to learn how open town meeting affects the town's growth management effort. The two measures are the community preservation act (CPA) and growth rate limit (CAP). The CPA was adopted through a referendum at 65% vs. 35% margin and the CAP was adopted at a close margin under open town meeting.

The CPA referendum result indicated that the majority of town residents would support growth limitation. As mentioned above, the CPA was created for open space protection, historical preservation, affordable housing provision, and outdoor recreation improvement. There are two themes expressed in its purpose in the context of Westford—the first is to maintain the town's environmental and historic character; the second is to aid in the creation of affordable housing. The preferences of the town's residents, either newcomers or long-term, are similar in that both groups support the protection of community character and oppose affordable housing; the only difference is in the extent. When a resident voted for CPA, most likely he believed that the benefit he would gain from protecting community character surpasses the potential negative impact on his lifestyle by creating more affordable housing. He would be a growth-limitation supporter. When a resident voted against CPA, most likely he thought the opposite way, leaving his precise stand on growth orientation unclear. Alternately, he might think in a similar way as CPA supporters, but did not support the tax surcharge due to economic constraints. He would be a potential growth supporter. As the referendum was a town-wide vote, the 65% vs. 35% referendum result from the CPA voting thus indicates that the majority of town-wide voters thought they would be better off by supporting the CPA; that is, that the benefits associated with protecting community character exceeds the potential negative impact of more affordable housing. According to the above reasoning, I can make an inference that at least 65% of the voters would support growth limitation.

However, there were conflicting results in voting on growth limitation measures under town meeting. In 1995, a town-wide moratorium was turned down by a large margin in the town meeting. This fact indicates that a majority, if not all, of the town meeting participants were growth promoters or at least not supporters of no growth, at that time. Apparently the growth limitation supporters, who account for a majority of the town residents, did not show up proportionately. In addition to the loyal town meeting participants, namely senior long-term residents, the evidence indicates that there was a representation of the "growth machine"—voters in the development businesses or industries. A respondent to the town's 2007 master plan survey states that the 1995 moratorium was turned down by local residents and developers. Also in that survey, several responses pointed out that there were development interests among the town officials. When the issues involve development, I have no doubt that voters related to the "growth machine" will most likely attend town meeting—development is their business, and thus their livelihoods depend on its success.

In 1996, the adoption of CAP under the town's open town meeting also indicates a likely misrepresentation of the town meeting. The measure was passed by a vote taken by a show of hands that was so close the vote had to be taken twice. This result raised a question on the participation rate of growth-control supporters, because it would be reasonable to see an easy win for the CAP measure if the growth-limitation supporters attended the meeting proportionately. Although I do not have information as to who attended the meeting at that time or if the growth promoters stacked this meeting article, the voting result indicates that growth-limitation supporters were less represented. The evidence also suggests that there was manipulation involved in voting on this article. The article was placed at the very end of the town meeting warrant list, and as it was an annual town meeting the list was quite long. This may

suggest that there is a connection between the government's interest and the benefits associated with growth, and public officials having such an interest made contributions, at least partially, to the close voting result.

These results may suggest that Westford's open town meeting is not a precise representation of the town. Among all registered voters, long-term residents and development interest-related voters tend to be overrepresented, while growth-limitation supporters such as newcomers seem underrepresented. The meeting operators with special interests may have also manipulated the meeting to promote their interests. The open town meeting in Westford may have altered to a certain extent the connection between voters' preferences and resulted in a growth management framework; however, the resulting overall growth management effort still reflected the majority voters' preference for restrictive growth management due to the preponderance in the proportion of growth-limitation supporters. It would be difficult to determine the result if the proportion of growth-limitation supporters was not overwhelming.

Why do newcomers tend to be less likely to participate in town meeting? The answer, supplied by an interviewee, may help. This interviewee is a young professional who lives in a different town than where he works. He has never attended the town meeting in the town where he lives, but he says he would if he worked there. In Westford, commuting newcomers are not uncommon. According to the 2000 census, 38.4% owner-occupied householders were newcomers (moved-in between 1995 and 2000). Based on a recent survey conducted by the town, two-thirds of local residents are commuters working outside the town. If the majority of long-term residents work locally, then a conclusion can be reached that a majority of newcomers are commuters. If the interviewee is a common case, then it is understandable why newcomers do not participate in Westford's town meeting.

6.2.4 Summary

Westford has evolved from a rural community into an affluent suburb since the 1960s. Rapid development occurred from the middle of the 1980s through the 1990s and was slowed down in the last decade. Prestigious single-family homes are a dominant feature of the town's development. As a result of the development pattern, the town has attracted many wealthy newcomers, most of whom are commuters. The newcomers and local long-term residents play important roles in local growth politics highlighted by two constant themes—public schools and open space character. The town's growth policies feature restrictive growth management efforts, including such measures as low-density-only zoning, growth rate limit, and the community preservation act. The town is governed by an open town meeting.

The restrictive growth management framework in Westford is the result of interaction between local residents and growth interests. Even though there is a division among local residents with differing motivations toward growth, they converge into a similar approach to limit growth under the threat of large-scale development. This convergent approach outweighed growth interests in the town meeting and resulted in restrictive growth limitation. In Westford, rapid growth during the 1990s placed severe burdens on the town's public services, particularly public schoolsl and was damaging the town's attractive country character. Large-scale development has caused tax increases and loss of open space. In fighting rapid growth, residents' status determined their motivations and behaviors in local growth politics. While the wealthy newcomers put more weight on the protection of the open space character of the community, long-term residents, especially seniors, emphasize their tax burden as well as the affordability of their living place. Although they have different motivations, they converged to the same orientation toward growth. Together they successfully defeated the development interest-related

voters in the town meeting. As a result, the integrated preferences of local residents turned into a stringent growth management effort through its town meeting.

The case study results also suggest that Westford's open town meeting is not a precise representation of the town and can have a potential impact on the growth management measures adopted. In the open town meeting, among all registered voters, long-term residents and development interest-related voters tend to be overrepresented, while growth limitation supporters such as newcomers seem underrepresented. The meeting operators with special interests may have also manipulated the meeting to promote their interests. The open town meeting in Westford may have altered to a certain extent the connection between voters' preferences and the resultant growth management framework; however, the resultant overall growth management effort still reflected the majority voters' preference for restrictive growth management, due to the preponderance in the proportion of growth limitation supporters. It would be difficult to determine the result if the proportion of growth limitation supporters were not overwhelming.

6.3 Town of Chelmsford

Figure 6-8. Chelmsford Town Center

Like Westford, Chelmsford is a Greater Lowell suburban township in Middlesex County, and like Westford it is also a member of the Northern Middlesex Council of Government. It is situated about 30 miles northwest of Boston. Other than Lowell on its northeast, Chelmsford is

surrounded by five towns: Tyngsborough to the north, Tewksbury to the east, Billerica to the southeast, Carlisle to the south, and Westford to the west (see Figure 6-9). Chelmsford is bordered by two sizable rivers: the Merrimack River to the north, and the Concord River to the east. Both Interstate Highway 495 and US Route 3 cross through and intersect within the town. As of the 2010 Census, the town's population was 33,802 and the population density was about 1,503.4 per square mile. Named after Chelmsford, England, the town was first settled in 1653 and incorporated in 1655 by an act of the Massachusetts General Court. Chelmsford originally contained the neighboring towns of Carlisle and Westford, as well as parts of Lowell.

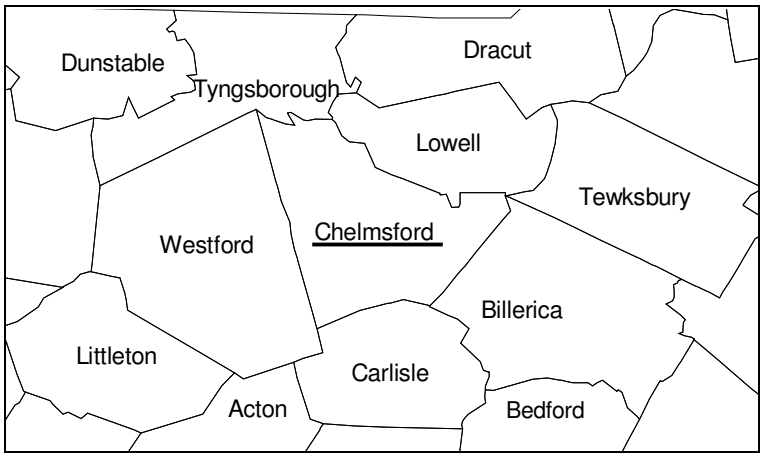


Figure 6-9. Location of Chelmsford

In its early history, the Chelmsford area consisted of roadways following Native American trails that linked colonial farmsteads. The heart of the community provided goods and services for travelers and those residing in the predominantly agrarian community. Chelmsford Center today has retained much of its New England village-style character, with small shops located in older, detached buildings and historic homes. Originally, the town's economy was fueled by lumber mills, limestone quarries and kilns. In the first part of the 19th century, both the Middlesex Canal and Middlesex Turnpike were built through Chelmsford and textile, iron works and cider manufacturing industries boomed. After World War II, Chelmsford experienced a large

growth spurt between 1950 and 1970, coinciding with the connection of US Route 3 in Lowell to Massachusetts Route 128 in the 1950s and the extension of US Route 3 from Chelmsford to New Hampshire in the 1960s. New economic opportunities featuring high-tech manufacturing and R&D came to the town and transformed it from a rural town to a thriving mature suburb. Since the 1980s, however, the town has entered a long period of slow growth with an emphasis on redevelopment.

Figure 6-10. Chelmsford Old Town Hall

6.3.1 Local Conditions and Growth

Rapid development in Chelmsford started after World War II, which can largely be attributed to regional transportation improvements, the suburbanization of employment centers, and the relatively high housing costs in the Greater Boston area. The town's development can be divided into three periods: rapid housing development from 1950 to1970; commercial and industrial development from 1970 to 1985; and slow growth from 1985 till today.

After World War II, the Town of Chelmsford saw a significant increase in population. The development of the local highway network, particularly Interstate 495 and U.S. Route 3, brought new economic opportunities to the community, transforming Chelmsford from a rural town to a

mature suburb. As can be seen in Table 6-7 below, Chelmsford's population grew from 9,408 to 15,130 between 1950 and 1960, a growth rate of 60.8%. During the 1960s, the town population more than doubled from 15,130 to 31,432, making Chelmsford the fastest-growing community in the Commonwealth during that time period.

Table 6-7. Population Trends in Chelmsford, 1950-2010

Year	Population	Change	% Change
1950	9,408	--	--
1960	15,130	5722	60.8
1970	31,432	16302	107.7
1980	31,174	-258	-0.08
1990	33,383	2209	3.9
2000	33,858	475	4.6
2010	33,802	-56	-0.2

Source: 2010 US Census

In the period 1971-1985, while residential development slowly continued, commercial and industrial development featured the most dramatic land use change. From 1971-1985, as outlined in Table 6-8, 342 acres of commercial and industrial lands were developed. Although population growth in the community began to level out after 1970, an additional 703 acres of land were converted to residential use between 1971 and 1985. This was primarily due to a decrease in household size and the formation of new households.

Beginning in 1985 the town entered a slow growth period. From 1985 to 1999 the rate of new development in Chelmsford slowed considerably, as evidenced in the land use change data. Commercial and industrial land uses grew by 28% and 30% respectively. Residential land use increased by 13% during this same period. Since 1999, there has been almost no change in land use within the Town of Chelmsford. This can be attributed to a slowing economy and the nearly built-out nature of the community. By 2008, approximately 64% of the town's land area had been developed.

Table 6-8. Land Use Change in Chelmsford, 1971-2008 (Acres)

Class of Land Use	Acres in Use					Percent Change				Town
	1971	1985	1999	2005	2008	1971-85	1985-99	1999-05	2005-08	% 2008
Commercial	242	334	426	411	414	38%	28%	-3.60%	1%	2.80%
Industrial	204	454	592	561	560	150%	30%	-5.30%	-0.20%	3.80%
Residential	5,758	6,461	7,306	7,163	7,371	12%	13%	-2%	2.80%	50.00%
Other	8,575	7,529	6,454	6,616	6,406	-12%	-14%	2.50%	-3.20%	43.40%
Summary										
Developed	7,191	8,380	9,435	9,286	9,499	17%	13%	-1.60%	2.20%	64.40%
Undeveloped	7,587	6,398	5,343	5,464	5,254	-16%	-16%	2.30%	-3.80%	35.60%
Total	14,778	14,778	14,778	14,750*	14,753*	N/A	N/A	N/A	N/A	100%

Note: 2008 Land Use was updated from the 1999 McConnell Land Use files through orthophotography at a scale of 1 to 400.
**Totals from 2005 and 2008 are due to State methodology changes initiated in 2004.*

The land-use pattern in Chelmsford reflects the substantial changes precipitated by post-WWII development. The town has a traditional Town Center with a number of distinct neighborhoods (see Figure 6-11). The north neighborhood is a working- class community, which grew around the mill complexes during the nineteenth century and features a compact and mixed land-use pattern. The east neighborhood is largely occupied by Lowell commuters who are associated with the business activities within Lowell and who desire a less urban lifestyle. The south neighborhood was developed at a later time and features a rural character with high-style suburban houses.

In general, the northerly portions of the town tend to be more urban, while the south is somewhat rural in character. The town is a composite of development traditions, many of which pre-date zoning. This phased-evolvement can be seen by the style and construction of its architecture as well as the design and layout of its transportation infrastructure. Local land use regulations have shaped recent development, but it has occurred in the face of protest by the older, established neighborhoods. There is strong community support in the town for preserving and respecting the historic fabric of these neighborhoods.

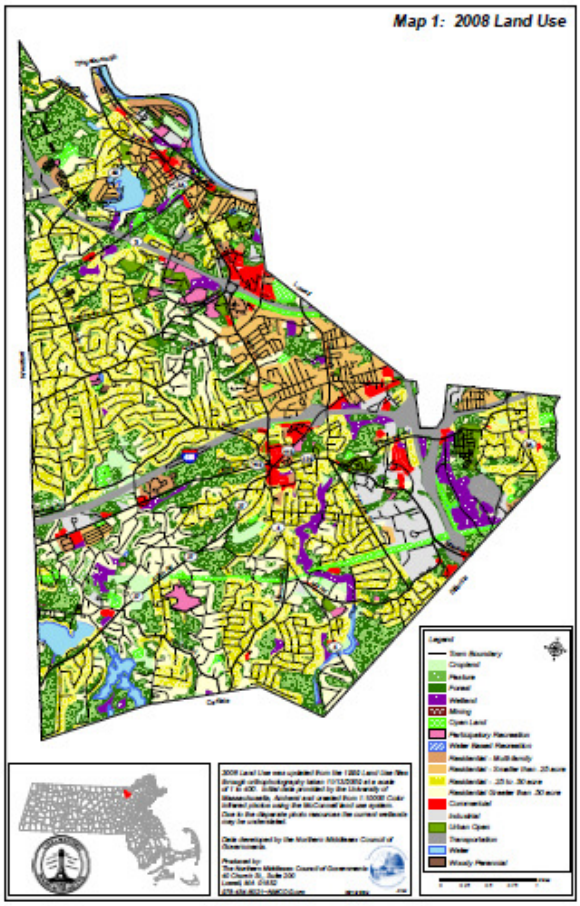


Figure 6-11. Chelmsford Land Use Pattern

Currently, more than half of the land in Chelmsford is for residential use. An overwhelming majority of the homes are detached single-family residences built in tract subdivisions. As shown in Table 6-9, 68 % of the town's land is used for residential purposes, of which 92% is utilized for single-family residences. An additional 6% of the community's acreage is occupied by other residential uses, including condominiums, multi-family housing and rooming/boarding houses. Condominiums represent approximately 5% of the residential land uses and 3.47% of the overall land-use acreage. Two- and three-family homes make up a very small percentage (1.43%) of the land use in the town overall and only 2% of the residential land. Residential uses are distributed consistently throughout the town. Commercial and industrial uses occupy 8.8% of the town's land.

Table 6-9. Land Use in Chelmsford, 2008

Class of Use	Acres	% of Total Land	% of Total Westford
Residential			
Single-family dwellings	7,193	62.26	
Two-family dwellings	126	1.09	
Three-family dwellings	39	0.34	
Condominiums	401	3.47	
Mobile homes	39	0.34	
Four to eight unit apartment	10	0.08	
Apartments with more than eight units	54	0.47	
Rooming and boarding houses	2	0.02	
Total	7,864	68.07	41.85
Commercial			
Hotels, Motels and Nursing Homes	28	0.35	
Storage Warehouses and Distribution Facilities	74	0.64	
Retail Trade	140	1.21	
Auto-Related Uses	30	0.26	
Banks, General and Medical Offices	161	1.39	
Indoor and Outdoor Recreational Facilities	32	0.28	
Misc.	8	0.07	
Total	473	4.09	2.70
Industrial			
Manufacturing, R&D	489	4.23	
Public Utilities	57	0.49	
Total	546	4.72	5.29
Exempt Land			
Municipal	1,870	16.19	
Colleges, Churches, and Charitable Org.	228	1.97	
State Land	307	0.27	
Total	2,405	20.82	
Chapter 61, 61A, 61B Land	265	2.3	
Grand Total	11,553	100%	

Source: Chelmsford Assessor's Database for FY 2008

Chelmsford is nearly built out, with only 680.58 acres of vacant developable land remaining, as a build out analysis conducted by NMCOG in 2008 indicates. A comparison of land use between Chelmsford and Westford also reflects the built-out nature of the town (for Westford's figure, see right column in Table 6-9). While 64% of the land in Chelmsford had been developed by 2008, only 40% of the land in Westford was developed by 2007. According to 2008 figures, in Chelmsford the percentages for both residential use (68%) and commercial/industrial uses

(8.8%) are higher than those two percentages (42% and 7.8% respectively) in Westford (2007 figures). However, while Chelmsford has a larger share of commercial land, it has a smaller share of industrial land when compared to Westford. These figures also indicate that Chelmsford is a more mature suburb than Westford.

Chelmsford's housing stock has been growing more slowly and has become more diverse (see Table 6-10) compared to that of Westford. From 1999 to 2009, the town's total housing stock only expanded by 520 units, a 4% increase, bringing its total housing stock to 13,545 units. However, multi-family housing, especially larger units, increased faster than other types of units. From 1999 to 2009, dwellings with 3 or more units increased by 22%, while dwellings with 20 or more units added 395 units, a 38% increase. Over this same period, single-family detached housing added only 69 units, a mere 2% increase. The share of single-family housing actually decreased by 1% in the period 1999 to 2009, while the share of dwellings with 3 or more units increased by 3% during the same period. Additionally, in 2009 there were 241 mobile home units in the town, making Chelmsford's housing stock more diverse.

Table 6-10. Housing Units in Chelmsford, 1989-2008

Housing Type	1989	1999	2009	% Change 1989-2008
Total housing units	11,812	13,025	13,545	14.7
1-unit, detached	8,398	9,074	9,279	10.5
1-unit, attached	926	1,144	939	1.4
2 units	421	425	502	19.2
3 or 4 units	241	285	341	41.5
5 to 9 units	207	249	184	-11.1
10 to 19 units	648	529	611	-5.7
20 or more units	647	1,053	1,448	123.8
Mobile home	239	266	241	0.8

Sources: U.S. Census Bureau SF-2 Reports, American Community Survey, 2006-2008

The median housing price in Chelmsford is consistently lower than in Westford, indicating that Chelmsford is a more economically-diverse community. According to the Warren Group, the median selling price for single-family housing and condominiums rose steadily between 1996 and 2005 (see Figure 6-12). When the selling price for homes in Chelmsford peaked in 2005, single-family homes had a median selling price of $373,700 and the median selling price for condos was $272,000. Compared to the median selling prices in 1996, the cost of a single-family home in 2005 was 117% higher while condos were 124% more expensive. Between 2005 and 2008, the median selling prices declined. However, during 2009 the median selling price for single-family homes increased by 1.2% from $325,000 to $329,000, while the median selling price for condos declined by 8.5%, from $218,500 to $200,000.

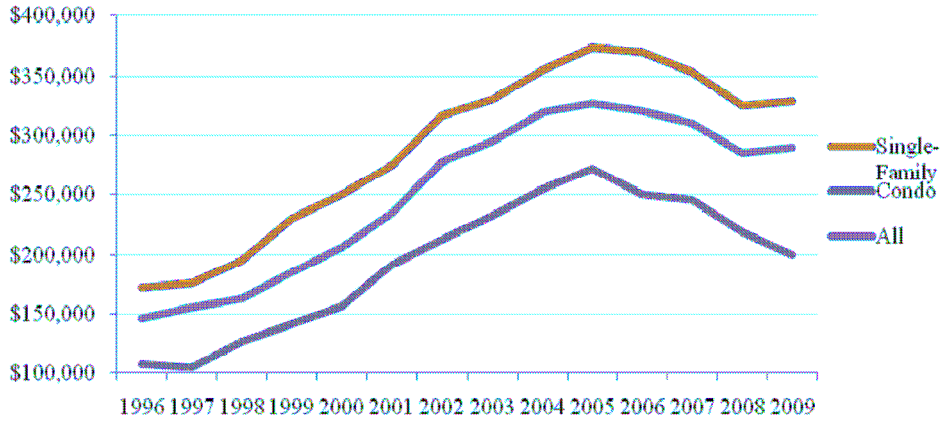


Figure 6-12. Median Selling Prices in Chelmsford, 1996-2009

Other sociodemographic statistics all indicate that Chelmsford is an economically better-mixed community than Westford. According to the American Community Survey, the town's median household income in 2008 was $88,293, much lower than the Westford 2007 median household income of $124,514, but still higher than the state average. Surprisingly, the racial composition of the two towns is quite similar—in 2008 the American Community Survey found that 91% of Chelmsford's population was white, while this percentage was 90% in Westford in 2007. The town's family indicators are weaker compared to Westford, as indicated by 2010

census data—among its total households, 70% were families, 58.3% were married couples, and 31.2% were families with children. Among occupied housing units, 82.7% were owner occupied according to the 2010 census. See Appendix G for more statistics of Chelmsford.

Occupation status also indicates that Chelmsford is a more mixed community than Westford (see Table 6-11). In 2000, 52.7% of Chelmsford's workforce was in management, professional, and related occupations, while 13.1% of the workforce was in material-related occupations such as farming, construction, or production. In that same year in Westford, however, 60.4% of its age 16+ population was in management, professional, and related occupations, while 11.9% of workers were in occupations related to material handling. This comparison suggests that when compared to Westford, Chelmsford had a larger blue-collar workforce but a smaller white-collar workforce in 2000, and thus hold a more mixed-occupation status.

Table 6-11. Occupation Status in Chelmsford and Westford, 2000

Occupation	Chelmsford		Westford	
Management, professional, and related occupations	9,583	52.7%	6,573	60.4%
Service occupations	1,872	10.3%	840	7.7%
Sales and office occupations	4,330	23.8%	2,184	20.1%
Farming, fishing, and forestry occupations	19	0.1%	8	0.1%
Construction, extraction, and maintenance occupations	1,109	6.1%	561	5.2%
Production, transportation, and material moving occupations	1,254	6.9%	719	6.6%

Data Source: 2000 US Census

The slow growth over a long period beginning in 1970 may have lessened Chelmsford's burden-providing public services such as schools and public water. The town's school system is made up of five K–4 elementary schools, two middle schools and one high school. Year 2000 enrollments for all Chelmsford public schools were 4,069. These schools possess the appropriate capacity to accommodate students from new development. Chelmsford's public water systems

consist of three water districts and service approximately 95% of the town. Since the town is fairly built out, no capacity constraints have been experienced by the districts.

However, the public sewer service is an interesting issue in Chelmsford—its construction actually increased property tax levies. There was no public sewage available during the rapid growth in the 1960s. Indeed, between 1966 and 1980 the town was cited numerous times for violations of the Clean Water Act, culminating in a 1980 Consent Judgment, a 1986 plan, and then the completion of sewer projects in 1998. The sewer projects covered 68% of the town by that time. However, in 1995 changes in the state sanitary code (Title 5) required that homeowners have their septic systems inspected at the time of selling their house. In 1995, the Chelmsford septic system inspection failure rate was 35% and the average septic system repair cost was $20,000. The average cost of connection to the sewer system was in the $2,500-$4,000 range. Subsequently, Chelmsford voters approved one more phase to serve the remaining 32% of the town. By the end of 2010, the entire town had been fronted by active sewer lines, thereby providing all properties with the ability to connect to the municipal system.

Between 1986 and 2005, twenty-two bonds were issued to cover the cost of design and construction projects for sewer projects. The overall project costs were covered by Federal and State assistance, local tax levies, and a variety of fees. As a result, the taxes increased $2.10 per $1,000 valuation. The town also had to hold four overrides to exempt those costs from Proposition 2½.

6.3.2 Growth Politics and Representative Town Meeting

Chelmsford is a mature inner suburban community between Lowell and Westford socioeconomically. While Lowell, as a traditional industrial city, has a larger blue-collar population with a lower socioeconomic status, Westford as a prestigious community has a large

population with a higher status. Chelmsford, with a more mixed population, can be placed in between these other two communities. Compared to Westford, Chelmsford has a larger share of working-class residents. This is also reflected in its more diverse housing stock, lower median household income, lower median housing price, and a higher share of material-handling occupations.

In terms of growth, Chelmsford shows a more balanced attitude, or a "composite vision," as mentioned in its master plan. In opinions regarding the latest comprehensive plan, stakeholders have expressed an interest in promoting economic growth and development without utilizing further undeveloped land as well as seeking a balance between continued economic and housing growth. Moreover, they express a keen interest in preserving the quality of life for town residents.

The balanced attitude in Chelmsford is the result of interaction between local residents and the built-out nature of the community. Large-scale development, with its overwhelming impact on public service and community character, is unlikely to be due to the built-out nature of the town. Most development projects have been 2- to 3-lot subdivisions, according to its community development director. Meanwhile, the town maintains a certain capacity to accommodate a moderate amount of development due to its early investment in infrastructure and services such as sewer, water, schools and public transit. Gains from small-scale development can help the town maintain its public services without changing its desired character. These results seem acceptable to most town residents.

However, there is still an emphasis on concerns relating to the fiscal impact of development, particularly for Chapter 40B projects. Currently, challenges facing the town are related to issues on the affordability and availability of housing in both Chelmsford and the Greater Lowell

region. The increased number of Chapter 40B housing developments has made the town's housing stock more diverse in terms of number of units and affordability. However, 40B projects may consume more public services such as public education but generate less tax, a service consumption level not comparable to the existing housing stock. As a result, current residents may have to bear the burden of part of these expenditures. There has been consistent resistance to Chapter 40B projects in the town.

Chelmsford has some organized resistance efforts from local business, but not from local residents. The existence of the Chelmsford Business Association is an indicator. Established in 1990 by a group of business people, the association's major focus was to reduce the differential between business and residential tax classification, and eventually succeeded when the differential was eliminated by the town's board of selectmen in 1998. According to a selectman, although appeals on certain projects presented by developers to town boards are common, organized efforts in growth politics are seldom seen in Chelmsford.

The town uses a representative town meeting model adapted in 1989 from its previous open town meeting model. The representative town meeting form of government is defined by its home rule charter. All legislative powers of the town are exercised by the town meeting. The administration of all town affairs is vested in the executive branch, which is headed by the 5-member board of selectmen and the town manager, who oversees public employees and serves as Chief Executive Officer. Other elected boards include, but are not limited to, the Planning Board; School Committee; Library Trustees; Board of Health; Sewer Commission; and the Zoning Board of Appeals. The town has three independent Water Districts.

The representative town meeting has 162 town meeting members evenly elected from 9 precincts. Members are elected for terms of three years each and vote on issues on behalf of their

precincts. Only town meeting members can vote in town meeting. Non-members can attend the meeting, but cannot vote. There are two scheduled annual town meeting dates. The spring meeting starts the last Monday in April and runs Monday and Thursday until it is completed. The fall town meeting commences on the 3rd Monday in October and runs Monday and Thursday until it is completed. A special town meeting may be called at any time. The representative town meeting has two primary responsibilities: determining an annual budget and voting on the town's bylaws, including land-use regulations.

At times it has been difficult to recruit town meeting candidates, and some precincts often fail to field a full slate of candidates. Vacant seats in a precinct are typically filled by voters selected by the other representatives of that precinct. In addition, even though the charter requires that "nomination of candidates for town meeting member shall be made by nomination papers signed by not less than twenty-five voters of the precinct in which the candidate resides and from which the candidate seeks election," write-in candidates are common due to the lack of nominated candidates.

Representative town meeting in Chelmsford has certain advantages over open town meeting in Westford. It has eliminated some problems associated with the open town meeting. First, the attendance rate is not a problem. Most of the town meeting members, at least 140 according to the town's report, attend the meeting except on special occasions. Second, there is no stacking problem because only town meeting members are permitted to cast votes. In addition, according to the town's planning officials, "representative town meeting is a better form of town meeting" from their perspective because it is much easier to convince the 162 members of good planning practices, such as a compact and mixed development pattern, than to convince the entire town, particularly when the attendees of open town meeting are an unknown factor.

However, representation could also conceivably present a problem. The difficulty in recruiting town meeting member candidates suggests that the participants might be the same group of residents no matter what form the town meeting takes. The filling of vacant seats by precinct caucuses provides an opportunity for stacking the representative town meeting. Interviews with public officials in Chelmsford indicate that many members are also retirees and that there is a "disconnection between the meeting members and local residents." The accidental or even deliberate overrepresentation of retirees, unionized town employees, parents of school-age children or other special interest groups can create temporary or permanent voting blocs in this type of town meeting. This form of meeting can also shape the decision-making and attendance behavior of members in a minority, as described in Westford's open meeting section. In addition, town meeting members may become targets of concerted lobbying at election time. This could be one side of a double-edged sword, in direct opposition to what the planners proclaim to be the other side.

6.3.3 Growth Management

Under the balanced attitude, the Town of Chelmsford has a relaxed growth management framework with an emphasis on redevelopment. The efforts made are less restrictive and more inclusionary compared to those of Westford. The town has a comprehensive plan, zoning bylaw, subdivision control, site plan review, community preservation act, water capacity surcharge, and wetlands regulations. These measures can be grouped into two layers: comprehensive control and spatial distribution control. Because the town has never had pace control, there is no pace control layer. Of these measures, the density regulation and overlay districts in the zoning bylaw, community preservation act, water capacity surcharge, and the wetlands regulations make contributions to the town's efforts in growth management.

6.3.3.1 Comprehensive Control

The Town of Chelmsford has over forty years of experience with long-range master planning, with master plan documents having been completed in 1963, 1975, 1986, 1996 and 2010. The first three master plan documents were completed during periods of rapid growth and were primarily focused on responding to the impacts of that growth and planning for future development. However, later master plans began to focus on the quality as well as quantity of future growth. The 2010 Master Plan presented three potential build out scenarios: environmental; economic; and composite. The document ultimately recommended the composite scenario.

The town's zoning bylaw, with subdivision control and site plan review combined, shapes the development pattern and design in the town. In the zoning bylaw, there are four residential districts, three of which are single-family districts and one being a residential multi-family district (RM). RM is a high-density residence district, which requires a minimum lot size of 5,000 square feet per dwelling unit, or about 8 units per acre. This density is substantially high within the Massachusetts context. A supermajority vote is required on all rezoning issues.

The zoning bylaw is inclusionary. Its RM district provides a density bonus for affordable housing development as is stated following: "...the Planning Board may grant a density bonus of 10% to an applicant willing to set aside 10% of the units for low and moderate income persons and families, for a period of at least ten years." The zoning bylaw permits the development of apartment buildings in its RM district. It also contains a residential mobile home district, although mobile home development in the town already has a history.

The town collects water and sewer capacity surcharges from new development. As a premise for applying for building permits, developers need to first obtain permits from the water district

and sewer commission. They also need to pay a capacity surcharge to cover the expense of buying regional allotments of sewer treatment and water supply. This surcharge is different from the usage fees applied after building completion, which is a standard charge based on the amount of usage.

6.3.3.2 Spatial Distribution Control

There are two types of efforts in spatial distribution control. While the residential district in the zoning bylaw includes special types of development such as multi-family units, other measures tend to exclude development from the bylaw. Two zoning overlay districts—the aquifer protection and floodplain districts, together with wetlands regulations, prohibit any construction within their boundaries in order to protect drinking water, damages from flooding, and wetland resource areas. The Community Preservation Act is also an important measure for the protection of open space and to limit development.

In Chelmsford the CPA is similar to that in Westford. It was adopted in 2001 through the town's representative town meeting with a 61% vs. 39% margin. The act created a local community preservation fund and a 9-member Community Preservation Committee. However, the initial act placed a property tax surcharge of only 0.5% with an exemption on the first $100,000 of assessed value. Unlike Westford, Chelmsford's surcharge levy did not exempt low-income households. Six years later, however, the town passed a surcharge increase to 1.5% for the CPA fund with a close 54% vs. 46% margin, and this time the low-income households were exempted. Similar to the Westford situation, the state provides a 100% matching fund to the CPA. The 100% distribution lasted through 2008 before beginning to decrease until reaching a level of about 27% in 2011.

6.3.3.3 Growth Management under Representative Town Meeting

Chelmsford's representative town meeting also shows a bias in voter representation, which may have shifted the direction of the growth management effort. I first look at a series of voting results on decisions regarding the funding of town-wide sewer projects. I then compare the voting results on the adoption of CPA and the sewer/water surcharge.

The voting results on decisions authorizing funding for the town's sewer project show that a proportion of the residents, possibly with a growth-limiting preference, were systematically underrepresented in the representative town meeting as well as previously in the open town meeting before 1989. In the 1980s and the middle of the 1990s, Chelmsford passed four town meeting articles that authorized funding for various portions of the town-wide sewer project. Three of the articles in the 1980s were passed unanimously in the town meeting, while the 1996 article was passed by a vote of 147 to 2. In the same time period as these articles, the town also utilized referendum to override Proposition 2½ for the approved funding. On these occasions, the voters consistently supported the sewer project by approximately 2 to 1 margins in the 1980s and by more than a 3 to 1 margin in 1996.

A comparison of town meeting results and referendum results suggests that the preference of one-third of the town's voters was missing in the town meeting in the 1980s, while the preference of one-quarter of the town's voters was missing in the 1996 town meeting. The possible reason for this could be that a group of voters who cast their votes on the referendum did not attend the open town meeting before 1989 and were not represented by meeting members in the post-1989 representative town meeting. These voters would most likely have consisted of two groups of residents. One group may have had septic tanks in good condition around that time and the other group may have had a growth-limiting preference and did not support the sewer

development because an established sewer system can trigger more growth and even higher-density growth. However, I had no information as to why they chose not to attend town meeting.

The comparison between CPA adoption and the sewer/water surcharge decision also indicated a representation bias within the town's representative town meeting; this bias may have influenced the relationship between voter preference and growth polices. As stated above, in 2001, Chelmsford adopted the CPA act through referendum with a 69% vs. 31% margin. The act ordered a tax surcharge of 0.5%. In 2007, the town passed a surcharge increase to 1.5% for the CPA fund with a 54% vs. 46% margin. Using similar analyses as in the Westford case, I find that this voting result indicated the presence of majority voters town-wide, with a strong orientation for community character protection. However, when the sewer/water surcharge was voted on in the representative town meeting in 1994, the measure was passed unanimously. By a planned or guided development approach, the surcharge measure still indicates a growth orientation, one allowing development to devour the town's few remaining open space parcels. This contradicts the preference of growth-limitation supporters. At that time, there were no measures such as the CPA to protect the open-space community character from encroaching growth. Yet no voters had ever devised alternative measures or offered different voices. Growth-limitation supporters seemed inactive in the representative town meeting, and their growth-limiting tendency was never injected into Chelmsford's growth-management efforts.

These comparative results may indicate that Chelmsford's representative town meeting shows a bias in the representation of the town. Voters with a growth-limiting preference might be under-represented, while other voters such as retirees may be over-represented. The consistent unanimous passage in Chelmsford's town meeting may indicate public officials' manipulation of the meeting, but there is no substantive evidence to support this. The balanced or "composite"

effort toward growth in Chelmsford may be a result tilted by the town's representative town meeting and has appeared as a reflection of the over-represented development interest combined with the preference of retirees. However, the reason for growth-limitation supporters being less likely to appear as meeting members is unknown.

6.3.4 Summary

Chelmsford is a mature inner-suburban community. It experienced rapid development during the 1950s and 1960s, but after that time entered a long slow growth period. Today the town has almost reached its built-out stage. The town has a mix of residents having various socioeconomic status including wealthy newcomers, Lowell business commuters, long-term residents, and blue-collar workers. Due to its built-out nature, the town has a balanced and inclusionary growth-management framework which emphasizes redevelopment and affordable housing provision. The town has adopted a community preservation act and collects sewer and water surcharges for new development. In 1989, Chelmsford switched from an open town meeting to a representative town meeting.

The balanced growth management effort in Chelmsford is also the interactive result of local residents and growth-related interests, with possible filtration through the representative town meeting. Due to the town's built-out nature, large-scale development at this point is unlikely. Occasional scattered growth or redevelopment can help maintain the town's public services and keep a healthy local economy. In this context the balanced growth management is in fact a pro-moderate-growth stand. Most retirees may take this stand because they are more concerned with fiscal burdens due to their constrained incomes. By dominating the representative town meeting, retirees and growth-related interests have adopted this balanced approach to development—a

moderate amount of growth to maintain the town's public services, but without seriously damaging its community character.

However, Chelmsford's representative town meeting shows a bias in the representation of the town. Voters with a growth-limiting preference, including newcomers and Lowell business commuters, might be under-represented. These individuals put more weight on open space protection because they came to the town for just such amenities, and thus the scarcity of open space is even more concerning to them. Still, there is no indication of such preferences in the resultant growth policies. The consistent unanimous passage for growth in Chelmsford's town meeting may also indicate public officials' manipulation of the meeting, but there is no further evidence to establish this. The balanced or "composite" effort toward growth in Chelmsford thus may be a result that has been tilted by the town's representative town meeting and has appeared as a reflection of the over-represented development interests and retirees' preference. However, the reason for growth-limitation supporters being less likely to appear as meeting members is unknown.

Another problem with both the representative town meeting in Chelmsford as well as the open town meeting in Westford is the likely manipulation of the meeting by public officials and employees. I have not articulated this issue in the case development due to limited facts and its complex nature. Local governments may have an inherent pro-growth orientation. Local governments run mainly on property taxes, and in most situations they are fiscally constrained. Therefore, public employees have the incentive to boost tax levies from growth and this may result in their manipulation of town meeting to promote their hidden pro-growth agenda. There is some evidence supporting this perception: First, the assertion that many growth measures were passed unanimously is questionable. In these two towns, and especially in Chelmsford with its

diverse population, it is unlikely to have repeated unanimous results without manipulating the meetings. Second, growth-management measures were often placed at the end of warrant articles, which may increase the likelihood of their not being passed due to many voters leaving before the end of the meeting. Third, in Westford's planning survey, many respondents feel there is a development interest in the town government. They prefer to replace the open meeting with a representative meeting or even a council. Ironically, the Westford representative town meeting research committee submitted a report recommending keeping its current open town meeting. If the manipulation does exist, it may further exacerbate the representation problem of town meeting.

6.4 Comparison and Conclusion

In this section, I first make a side-by-side comparison between Westford and Chelmsford in the areas of growth, local residents, town meeting, and growth management. I also make a comparison between town meeting and other forms of direct democracy, mainly initiative. Then I draw some conclusions from these two cases on growth-management adoption and the effects of town meeting on growth management.

6.4.1 Comparison

Westford is an affluent outer suburb in the Greater Lowell area and features prestigious single-family houses and an attractive natural environment, while Chelmsford, which neighbors Westford, is a mature inner suburb with a diverse housing stock but limited open spaces. Rapid growth first came to Chelmsford in the 1950s and 1960s followed by a moderate commercial development in the 1970s and 1980s; an eventual growth slowdown commenced after the early 1990s. Now Chelmsford has almost reached its built-out stage. For Westford, growth came at a later time, around the middle of the 1980s, then it increased in the 1990s before slowing down in

the 2000s, yet it was still at a higher rate when compared to Chelmsford. Today, in both communities, Chapter 40B affordable housing development is an important issue.

Growth has placed heavy pressures on public services and infrastructure in the two towns. In Westford, large-scale development in the 1990s severely burdened the town's public schools. Six of its nine schools were constructed or renovated from 1995 through the early 2000s. In Chelmsford, public sewage and water have been hot issues. The town has improved its water districts and installed a town-wide sewer system since the late 1980s.

The residents of Westford are highly homogeneous in socioeconomic status, while in Chelmsford residents tend to be more diverse, a combination of high status residents and a working class. In Westford, both median household income and housing price are substantially higher than in Chelmsford. Racial composition is similar in these two towns—whites dominate both communities, with only a handful of Asian residents. Both towns have a large group of out-of-town commuters and both have a substantial group of senior or retired long-term residents.

Both Westford and Chelmsford have adopted town meeting as their form of government, but Westford uses an open town meeting while in 1989 Chelmsford switched from open to representative town meeting. The representative town meeting in Chelmsford has certain advantages over the open town meeting in Westford, including an improvement in the attendance rate and the elimination of voter stacking. Still, both communities share the same representation problem. Evidence indicates that retired long-term residents tend to be the central participants of the meetings, while newcomers and commuters are less likely to get involved. There is also a likely manipulation of the meeting by public officials and employees due to their inherent incentives to promote growth.

The two towns have taken different growth-management paths. Westford has a stringent growth-management system. It has adopted low-density-only zoning, a growth rate limit, a community preservation act, and a mitigation provision. Westford also prohibits apartment and mobile home development and requires a supermajority vote on rezoning issues. In contrast, Chelmsford takes a balanced approach to growth management, allowing higher-density development as well as apartments and mobile homes. Meanwhile, the town has adopted a community preservation act. It collects a sewer and water capacity surcharge from new development and also requires a supermajority vote on rezoning issues.

6.4.2 Town Meeting and Initiative

After having conducted these two case studies, I have an improved understanding on town meeting. As a form of direct democracy, town meeting shows several important differences from other forms of direct democracy. Here I compare town meeting with initiative.

While initiative is a direct democracy tool used in most cases occasionally or only when necessary, town meeting is a general form of government dealing with a complete spectrum of public issues. Initiative may be launched at any time and requires an initiator, but town meeting has a fixed schedule in general, usually twice a year, and does not requires someone to start it.

Town meeting is under the control of public staff such as moderator and town clerk. As a result, town meeting can be influenced by the interest of meeting staff who may promote growth in order to maintain a balanced budget for the town. Meanwhile, initiative completely bypasses the public sector and gives the decision-making power to its participants. In most cases, initiative participants are against the public sector's growth interest and use initiative as a channel to express their preferences. Initiative tends to be prone to the influence of outside interests.

Compared to the lack of discussion in initiative process, town meeting provides deliberative opportunities such as public hearings. During the meeting process, there are many opportunities for citizens to participate, to ask questions, and to involve into discussions. Unless the "winner takes all" nature of initiative measures, town meeting allows negotiation and mediation processes before, during, and even after the decision-making process.

Contrary to my perception that town meeting is a form of direct democracy with better representation of citizens, there is an under-representation problem associated with town meeting. In both towns, the meeting participants are only a small proportion of the general public and they tend to be over-represent particular groups of the eligible voters. This characteristic does not distinguish town meeting from initiative for which representation is also a problem.

6.4.3 Conclusion

In both towns, growth management efforts can be seen as the result of interactions among growth, local residents, and town meeting within the state framework. Residents have their preferences toward growth based on their status. However, their preferences are layered and may change due to varying growth conditions. Town meeting provides a stage for residents with different preferences to interact, but the meeting induces unbalanced representation and possible manipulation. Overall, the growth-management effort in a community is the integrated result of residents' preferences toward growth through the filtration of town meeting, all occurring under the umbrella of the state framework.

In these two towns, newcomers and commuters, with higher socioeconomic status, have the preference to protect the character of their community's open space as well as to reduce the fiscal burden on local public services, although the fiscal burden tends to have a lower priority in their preference. They generally tend to support a restrictive approach to control growth. In

Chelmsford, retired long-term residents and working-class residents prefer to keep the environmental amenities, but they pay more attention to their tax bills and housing affordability. These residents tend to support a moderate growth; neither rapid growth nor no growth are attractive to them because the former can place a heavy burden on local services and result in tax increases, while the latter may reduce housing supply, thus leading to housing price inflation. Residents who work in development-related industries as well as public employees may benefit from growth; both of these groups tend to support a pro-growth agenda.

The decisive force in both towns' growth politics is in fact the retired long-term residents. In Westford, rapid growth during the 1990s severely burdened the town's public services, particularly public school, and was damaging the town's attractive country character. Large-scale development has led to tax increases and the loss of open space. In this context, both newcomers and the retired teamed together to combat rapid growth. They defeated the pro-growth interests in the town, resulting in the adoption of growth-limiting measures. In Chelmsford, however, large-scale development is unlikely at this point due to the town's built-out nature. Occasional scattered growth or redevelopment can help maintain the town's public services and bolster a healthy local economy. The retired teamed with pro-growth interests to adopt a balanced approach to development, thus allowing a moderate amount of growth to maintain the town's public services without seriously damaging community character.

Nevertheless, for these two towns the use of town meeting is not a precise representation of the town. Indeed, to a certain extent town meeting has shifted the growth-management efforts adopted. In both types of town meeting, among all registered voters, long-term residents and development interest-related voters tend to be over-represented, while growth-limitation supporters such as newcomers seem under-represented. The open town meeting in Westford has

filtered off, to a certain level, the newcomers' preference for limited growth. However, the resultant overall growth-management effort still reflects the majority voters' preference for restrictive growth management. This result is mainly due to the retirees' support for limiting growth and the preponderance in the proportion of growth-limitation supporters. It would be difficult to determine the outcome if the proportion of growth-limitation supporters was not overwhelming, as indicated by the close voting results in the adoption of the growth rate limit. In Chelmsford, the representative town meeting has also filtered off the newcomers' growth-control preference, but due to retirees' support of moderate growth in this case, the town has finally adopted a balanced approach to development.

The reason for growth-limitation supporters being less likely to appear in the meetings is unknown, although in both of these towns such supporters are similarly newcomers and out-of-town commuters. My perception is that both newcomers and commuters may feel less attached to their communities due to their unfamiliarity with local growth issues and politics. They may be further discouraged from attending town meeting if the meetings are mostly attended by a group of strangers who may give them a feeling of alienation or even hostility. On the other hand, long-term residents, especially seniors, are well-attached to their hometown and feel comfortable in the meetings amongst friends and neighbors. These residents may also have the tendency to more willingly follow the casual hints of the meeting moderators.

Contrasting with the meeting's filtration effect on newcomers and commuters, manipulation of a meeting by public officials and employees can magnify their influence on growth policy adoption. As meeting organizers, they can deliberately arrange the meeting schedule, including its meeting time, location, and warrant articles. They can also strategically filter the meeting

participants by "teaming up" with the welcomed while creating an unfriendly atmosphere around the unwelcomed. Such corrosive behavior has caused voter distrust and discontent in both towns.

Town meeting presents difficulties when faced with the acceptance of professional inputs. This trend is particularly obvious in Westford's open town meeting. Even though the voter participation rate is low, there are still a large number of voters in a town meeting compared to the small number of elected officials in a council. The participating voters may not always be exactly the same group of people, and thus planners equipped with state-of-the-art planning principles always find it difficult, if not impossible, to pinpoint the right targets. A planner interviewee complained that when she wants to promote the compact and mixed land-use pattern, she has no idea with whom she should talk. Moreover, most town meeting participants are ordinary residents, so they may not have a good understanding of the impacts and implications behind the issues. These conditions make educating the decision-makers problematic for planners.

Growth is a double-edged sword in influencing growth-management emergence. When there is rapid growth, it may tax the community's ability to provide public services while driving up the tax bill. As a result, economically-constrained residents, such as Westford's long-term seniors, may be pushed out. However, if growth is strictly limited, especially when facing a moderate or heated housing demand, the housing market could be inflated. Again, the low- and moderate-income residents may not be able to afford the increasing rent and leave the community. To protect this vulnerable group of residents, the best practice would be to keep a moderate and stable pace of growth, balancing the tax bill and housing prices.

The impact of growth on land-use policies can be compromised by a community's capacity to accommodate growth. Such capacity, rather than growth itself, seems to be an important factor,

one that affects voters' decision on growth management. This relationship was reflected in Westford's inactivity after the expiration of its growth rate limit.

Outside factors such as state provisions and court rulings are important in the formation of local growth-management efforts. The state plays a crucial role in the adoption of some growth management measures in both towns. Even though Massachusetts is a home rule state and both towns have their home rule charters, the power of the towns is still strictly constrained by the state. The towns must follow state provisions precisely in order to adjust their growth management. Even though both Westford and Chelmsford are reluctant to increase their affordable housing share under the Chapter 40B provision, they continue to work cooperatively with the state. State incentives also have a strong influence over local regulations. For example, the community preservation act was adopted directly under state initiation and incentives. Court decisions also have an overwhelming influence on local policy decisions, as exemplified by Westford's abandonment of its growth rate limit. After the State Supreme Court's decision on the *Zuckerman* case, Westford did not renew its growth cap measure; this non-renewal was at least partially due to concerns over the threatening possibility of litigation in the future. Another example of the Court's influence over local policy adoption was its ruling on the early *Sturges* case, which led to the popular adoption of permit cap. Studies on local land-use regulations and growth management must take into account the impacts of state-level factors.

Chapter 7. Conclusion and Discussion

Studies on growth-management adoption often focus on growth and local residents' status. Some studies have also paid attention to ballot box planning and have examined the effect of direct democracy practice on resulting planning policies. This study further extends the scope of this research and focuses on the institutional effect of direct democracy on growth management.

The study presents a complex connection between direct democracy and growth management. It shows that direct democracy not only affects policy restrictiveness, but also has a connection to two characteristics of growth management—exclusionary potential and management-orientation. The town meeting case studies further indicate that growth-management emergence is a dynamic result of interaction between growth and resident groups under the filtration of town meeting.

There are some limitations associated with this study: First, with regard to growth-management measures, no information on the adoption method is available. We do not know if such measures were adopted by direct democracy or by the council government. Second and also related to growth-management measures, no adoption year is available. This may generate confusion between the impacts of growth and adopted polices. Third, the sample sizes for growth-management characteristics analyses are relatively small for the nationwide models. The results generated should be treated with caution.

7.1 Direct Democracy and Growth Management Restrictiveness

According to the findings, direct democracy does influence growth management restrictiveness, but in a complicated manner. It affects growth-management policies not only by itself, but also by its interaction with a locality's socioeconomic status. According to the results, a locality with access to direct democracy tends to be less restrictive in growth management

compared to a locality without access to direct democracy. Moreover, direct democracy tends to magnify the effect of community status on growth management. For example, income in direct democracy localities has a stronger impact on growth management than in localities without access to direct democracy.

It is important to observe that socioeconomic status works in conjunction with direct democracy in the determination of growth management policies. As analyzed in Chapter Two, it is logical to conclude that higher socioeconomic status communities have both the incentives and the resources to adopt more stringent growth-management policies to control or manage growth. However, the findings from previous studies on this topic have mixed results, and the reasons for the results are unknown. The findings from this study may offer an explanation in this regard. Direct democracy provides a channel for local electorates, one through which their political will can be expressed into policies, while in localities without access to direct democracy the representatives may have taken into consideration other factors than the pure will of their electorates into the policy adoption process. In addition, conducting status-bias research by mixing direct democracy and representative democracy localities may have reduced the opportunity to observe the relationship between status and resulting policies. Nonetheless, there is no conclusion made that in representative institutions the "representatives" do not represent their electorates.

However, the relationship between direct democracy and growth-management restrictiveness contradicts my hypothesis. Potentially, there may be two reasons that explain this contradiction: First, the growth-management restrictiveness variable takes into account only the total number of restrictive measures, but without looking into the content of such measures. If jurisdictions tend to adopt very stringent growth-management measures through direct democracy, then it is likely

that they do not need a large number of policies. Case studies focusing on policy contents may point in a promising direction for this type of research.

Second, direct democracy has different tools, such as town meeting and initiative/referendum, and different tools have different working mechanisms. Pooling all the tools together may tend to randomize the relationship between direct democracy and policy restrictiveness. The findings in this study have shown evidence in this direction—direct democracy tools do have unique working mechanisms and show different effects on growth management. The suggestion here is that instead of looking at direct democracy as a single entity, new research should be conducted that treats town meeting and initiative/referendum as two distinct categories.

Town meeting is a unique political instrument in the New England region. According to the findings, town meeting localities tend to have more restrictive growth-management measures compared to localities with council governments. This result confirms my hypothesis, and is more straightforward when compared to those from initiative and referendum localities. In initiative/referendum localities, policies may be carried out by both representative councils as well as electorates, while in town meeting localities all policies are adopted by the electorates. Thus, the findings from "pure democracy" jurisdictions can show the straightforward relationship between direct democracy and policies within the scope of this study. Additionally, town meeting localities, when compared to council governments, are more likely to have low-density zoning according to the individual measure models.

However, town meeting tends to weaken the relationship between community status and policy restrictiveness. The study finds that the effect of white population on growth policies in town meeting communities is weaker than in council communities. One explanation for this result could be that the white population is either under-represented by town meeting or over-

represented by representative council. However, the two cases I chose did not generate evidence on the under-representation of white population.

Initiative and referendum are popular in the non-New England region, especially in the West. Surprisingly, the study indicates that jurisdictions with access to initiative are less likely to encounter stringent growth-management efforts compared to jurisdictions without access to initiative. Analyses of individual measures further show that initiative communities are less likely to have urban containment measures, yet are more likely to have mobile home and apartment prohibitions. Together, these findings suggest that initiative communities have a less restrictive growth-management framework due to their lack of management-oriented measures. Initiatives may not affect communities' growth control or limitation efforts.

Furthermore, initiatives help exaggerate the impact of community status on growth management. The study finds that while white population has a positive effect on growth-management restrictiveness, this effect is much stronger in initiative communities. This finding supports my hypothesis and indicates that initiative, used in an institutional setting, helps translate higher-status groups' preference into growth management. This may be realized through the direct practice of initiative or ballot box planning by the higher-status groups, or by intimidating the representative decision-makers with the possibility of even more restrictive growth management.

Similar to initiative, referendum also shows a negative connection to growth management restrictiveness—localities with access to referendum tend to be less likely to have restrictive growth management. Further evidence shows that referendum communities are less likely to have facilities' regulations. Together, these results suggest that referendum communities tend to veto management-oriented measures, resulting in a less restrictive growth-management

framework. In my hypotheses, however, I assume that high-status groups are more likely to participate in referendum and less likely to stop growth-management measures due to their incentives to control growth. This finding would thus be a modification of my hypotheses.

7.2 Direct Democracy and Growth Management Characteristics

This study looks at two characteristics of growth management—the exclusionary potential and the management orientation. Findings indicate that direct democracy has a tie with the exclusionary potential of growth management, yet has a negative relationship with management-oriented measures. These relationships are better articulated through direct democracy tools.

The tie between direct democracy and the exclusionary potential of growth management is realized thorough direct democracy tools. The evidence shows that both town meeting and initiative communities have an exclusionary tendency in managing growth. Town meeting communities tend to be more likely to utilize low-density-only zoning as a growth-management tool. In many situations, this rules out small-lot housing, increases housing prices, and excludes the poor and minorities. Initiative communities are more likely to prohibit mobile homes and apartments, which oftentimes accommodate economically-constrained tenants. However, the exclusionary effect is not observed between general access to direct democracy and growth management, possibly due to the mix of different direct democracy tools. Furthermore, referendum also does not exhibit this exclusionary orientation.

This finding confirms my hypotheses. Higher-status residents tend to utilize direct democracy to manage growth. In doing so, two motivations may lead to their exclusion of the poor and minorities: First, there is a fiscal impact motivation. The poor consume a similar, and sometimes even higher, level of public services such as schools and policing when compared to the well-off, yet they pay less property tax due to their lower property values. Indeed, well-off residents are

subsidizing the poor in local public financing. Exclusion of the poor can thus benefit the rich. The second motivation is linked to community character. These two groups exhibit different lifestyles, which may result in a different community character, one unacceptable to the well-off, and thus provides another motivation for them to exclude the poor and minorities.

When pooling all direct democracy tools together into a general access, the study observed a strong pattern between direct democracy and management-orientation. Direct democracy communities systematically lack management-oriented measures such as urban containment and facilities' regulations. This pattern is further strengthened by the relationship between initiative/referendum and management-oriented measures. Initiative communities are less likely to have urban containment measures, while referendum communities are less likely to have facilities' regulations. However, no such pattern was observed in town meeting communities.

This pattern indicates an inflexible approach to growth management among direct democracy communities. Such communities either do not make efforts to manage growth, or they take rigid growth-limiting measures toward growth. By contrast, representative councils, without the influence of direct democracy, tend to be more likely to adopt management-oriented measures while taking a flexible approach to growth management. In general, these communities tend to channel growth into desirable locations, control the timing of development, and reasonably distribute the burden to provide, at least partially, public services to responsible developers.

7.3 Town Meeting Case Studies

The case studies indicate that growth-management emergence is a dynamic result of interaction between growth and resident groups under the filtration of town meeting. It is also observed that town meeting exhibits an unbalanced representation of the community. This

finding provides implications for other direct democracy tools and helps explain the results of the quantitative models.

Utilizing the model results, two town meeting cases—the Town of Westford and the Town of Chelmsford—are selected in Massachusetts. The cases are relatively less complex in terms of local conditions and political context. Both communities are within the same state and constrained by the same state provisions. They are both middle-sized and with a similar level of majority white populations. No organized interests have been observed in local growth politics.

In both towns, the growth-management efforts can be seen as the result of interactions between growth, local residents, and town meeting under a state framework. Residents have their preferences toward growth which are based on their status. However, their preferences are layered and may change due to varying growth conditions. Town meeting provides a stage for residents with different preferences to interact, but the meeting induces unbalanced representation and possible manipulation. Thus, the growth-management effort in a community is the integrated result of residents' preferences toward growth through the filtration of town meeting, which is of course under the state framework.

Westford presents a restrictive growth-management effort. In Westford, rapid growth during the 1990s severely burdened the town's public services, particularly public schools, and was damaging to the town's attractive country character. Large-scale development has caused tax increases and loss of open space. In this context, both newcomers and retirees teamed together against rapid growth. They defeated the pro-growth interest in the town, resulting in the adoption of growth-limiting measures. Interestingly, even though town meeting under-represented the newcomers, the filtration effect does not change the resulting policy effort due to the dominance of growth-limitation supporters' preference.

The Town of Chelmsford has a less restrictive and more balanced growth-management framework. In Chelmsford, large-scale development is unlikely due to the town's built-out nature. Occasional scattered growth or redevelopment can help maintain the town's public services and maintain a healthy local economy. Here the retired teamed with pro-growth interests and adopted a balanced approach to development—a moderate amount of growth to preserve the town's public services without seriously damaging its community character. However, newcomers with a growth-limitation preference are largely excluded from Chelmsford's representative town meeting. In this case, such under-representation has contributed to the balanced growth-management effort.

The results from the case studies indicate a need to modify my conceptual framework. In my framework, I assume that residents with higher socioeconomic status tend to participate in direct democracy and make growth decisions. I further assume that higher-status residents do so for fiscal considerations, particularly in the continuation of their lifestyles, which they enjoy. However, based on the results from these two case studies, participants of direct democracy are not necessarily higher-status residents. Economically-constrained retirees dominate the town meetings in these two cases. Even though the participants are not as expected, yet their motivations share similarities to my proposed framework. The retirees tend to focus on their fiscal constraints and the country atmosphere of their communities, though they put more weight on the former.

If participation in town meeting does not depend on socioeconomic status, then does another participation pattern exist? The case studies also reveal that in addition to long-term residents' participation in town meeting, newcomers and commuters are less likely to become involved in town meeting decisions. This may be caused by the difference between the two groups of

residents as regards their familiarity with local conditions, history, and more importantly, other participants. Together, these findings lead to a new perception that town meeting as an institutional mechanism may benefit the natives and thus encourage their participation.

The evidence also indicates the existence of development interest in public officials who organize and implement the town meeting decisions. Their preferences tend to be amplified through town meeting due to possible manipulation of the meeting. As meeting organizers, they seem to have many opportunities to adjust the arrangements or to create an unfriendly atmosphere for the not-welcomed, thus shaping the meeting results and tilting them toward their preferences. This situation is different from initiative or referendum voting. In these cases, the votes can completely bypass the representative government, thus leaving few opportunities for manipulation.

7.4 Putting Things Together

Putting findings from quantitative models and case studies together, I draw following conclusions. Contrary to the common perception that direct democracy leads to stringent land use regulations, the results show that direct democracy has limited influence over growth management restrictiveness and this influence is related to specific forms of direct democracy and geographic areas. While in New England region, town meeting is associated with more restrictive growth measures, at the national level excluding California, the research does not show a connection between direct democracy and growth management restrictiveness. However, in Midwest, where there is a large mix of local governments with direct democracy, the research finds a significant negative relationship between direct democracy and restrictiveness.

In addition to this direct relationship, the analyses also show that there is a limited indirect relationship between direct democracy and growth policies and this indirect relationship is also

tied to specific direct democracy tools and geographic areas. This indirect relationship is reflected in the New England region where town meeting tends to curb the translation of race to restrictiveness. In the Midwest, there is a positive relationship between growth management restrictiveness and the interaction term, indicating that direct democracy provides a mechanism through which race translates to restrictiveness. However, no indirect relationship is found at the national level.

The most important findings are on the relationship between direct democracy and types of growth management measures. First, direct democracy shows a positive connection with measures that have exclusionary potential. At the national level, direct democracy has a positive connection with building permit cap and a similar relationship can also be found in the Midwest. Findings also indicate that in New England region, town meeting encourages the use of low-density-only zoning. Second, direct democracy has a negative influence over management-orientation of growth management. This relationship can be observed at national level as well as most regions except the Northeast.

The limited influence of direct democracy over growth management might be better understood under the California context. California is often thought more restrictive on growth management approach than other states and it features universal use of direct democracy, i.e., initiative and referendum. This correlation leads many observers to infer that initiatives in particular lead to policy restrictiveness. However, there are many other features of the California planning regime that also might contribute to the restrictiveness of growth management. These include, for example, the California Environmental Quality Act (CEQA); the tax limitation of Proposition 13; a strong liberal or interventionist ideology in many cities and counties; state case law and statutes that have been very friendly to local experimentation in land-use regulation (i.e.,

exceptional strength of home rule well beyond initiative and referendum); fast growth; high property values; comparatively sparse infrastructure in newly developing areas (new growth requires bigger investments in roads, sewers, water, and schools); strong racial and ethnic diversity; and so on. Any of these features alone might be enough to heighten restrictiveness, but all of them together certainly do. Initiatives and referendum, perhaps, just add to the complex mix of features, and they may even be weaker than many of the others. Reducing initiative and referendum, consequently, or limiting their use, will probably not be enough to limit restrictiveness. The state has both too much growth pressure to reduce local desires to control and manage growth, and too many other options beyond initiative to adopt measures to do so.

The findings on the relationship between direct democracy and types of growth management measures also suggest that exclusionary measures and management measures are substitutes for one another rather than complements in most situations. Practical evidence has also pointed to this propensity. Pendal, Puentes, and Martin (2006) have shown that jurisdictions in California, as well as those in growth management families more broadly, do not use low-density-only zoning or apartment exclusion measures. So the real reason why direct democracy generally (at the national scale) does not associate with higher restrictiveness is because the only jurisdictions that use both exclusionary measures and management measures at the same time are those outside the growth management families. The assumption that communities with different approaches to growth management are similar in the "medium" levels of restrictiveness might be inappropriate. In reality, they are quite different, they have different motivations, and different political institutions result in different approaches. Separating these measures may help improve the quality of this research.

7.5 Policy Implications

These findings may give decision-makers mixed feelings. First, direct democracy as well as initiative and referendum in non-New England regions tend to have limited impacts on growth-management framework. Moreover, none of the evidence indicates that either initiative or referendum is connected with more restrictive growth-control measures such as low-density-only zoning. This finding contradicts the common perception that ballot box planning will result in more stringent growth controls, possibly leading to a series of negative outcomes such as housing shortages, housing stock imbalances, market inflation, and further affordability issues and exclusions. Taken from this perspective, this result can help reduce the anxiety of ballot box planning opponents.

However, direct democracy in the New England region, or the town meeting, shows a linkage to restrictive growth-management efforts. The effects of town meeting on growth policies are actually understudied in the current literature; this result may therefore warn academics and higher-level policy-makers to pay attention to the potential negative impact of growth policies adopted under town meeting. While town meeting is the product of state provisions, local public officials can basically do nothing to alter the meeting's institutional setting. Whether local officials have any incentive to make alterations is questionable, especially due to their possibly inherent development interest. State-level actions will be needed in order to curb the potential negative impacts from town meeting measures.

The evidence also indicates that direct democracy can result in potentially exclusionary policies, such as low-density-only zoning adopted through town meeting, or mobile home and apartment prohibitions as observed in initiative communities. Such measures are contrary to one of the crucial goals of planning. However, as these adoption processes are the direct actions of

local voters and bypass the local government, efforts to control these results must be initiated from state-level governments. Such efforts can focus on improvement of voter participation to make the process more representative. Moreover, these efforts could shape state provisions and generate a policy template to limit the type and contents of policies adopted through direct democracy.

Many have made the challenge that direct democracy tends to generate rigid and decisive measures, leaving out the deliberative process. The findings indicate that direct democracy has a less likely tendency to be associated with management-oriented measures such as urban containment and facilities' regulations. This shows that direct democracy lacks a flexible and planned approach to growth management. One explanation for this lacking could be that ordinary voters are not professional plan-makers and do not have the ability to devise deliberated and well-planned measures. Planning enlightenment and education can definitely help improve policy quality. To a certain extent, state-level incentives on the flexible adoption of measures attained by means of direct democracy can also help.

The next two points are related to town meeting in particular. Town meeting shows an unbalanced representation of local voters, and this may imply that town meeting possesses the same characteristics associated with other direct democracy tools. Many residents cannot attend town meeting due to schedule conflicts or other obligations such as childcare. Technology enhancement through TV broadcasting or Internet/mobile device connection with the meeting could substantially improve both participation and representation. Relaxed regulations on absentee voting could also increase the representativeness of town meeting.

Town meeting presents difficulties with regard to the acceptance of professional planning inputs. Even though the voter participation rate is low, there are still a large number of random

voters in a town meeting when compared to the small number of elected officials in a council. Planners equipped with state-of-the-art planning principles always find it difficult, if not impossible, to pinpoint the right targets. Additionally, most town meeting participants are ordinary residents who may not have a good understanding of the impacts and implications behind the issues. These conditions give planners difficulties in educating the decision-makers. Local governments should improve the communications between the public side and local voters in order to articulate policy contents and implications. The government should also offer voters more learning opportunities such as seminars or training programs to enhance their knowledge in order to make quality decisions.

7.6 Future Research

The limited effects of direct democracy on growth management restrictiveness might be the results of the existence of other strong factors that influence growth polices. In addition to growth and community socioeconomic status, these factors may also include state and local legal framework, community political orientations, local and regional real estate market, and so on. A comprehensive evaluation of such factors and a comparison of their effects against direct democracy's effects on growth policies may help improve our understanding on the relationship between direct democracy and growth management as well as a general understanding on policy adoption.

Methodological improvement can also make a future direction. As mentioned in previous section, exclusionary measures and management measures are not equal in terms of restrictiveness. They might also be different in motivations and backup institutions. An additive restrictiveness index by adding up all types of growth management measures may have mixed the uniqueness of these two types of policies. An improved approach of restrictiveness indicator

construction needs to take into account their difference and can possibly generate new insights on the relationship between direct democracy and growth management.

Appendix A. Local Provision for Direct Democracy Survey

Dear Sir or Madam:

In 2003, you responded to a survey by Cornell University Professor Rolf Pendall and his colleague Jonathan Martin about your jurisdiction's land-use regulations—thank you for your help at that time! I am now conducting a follow-up survey on local provision for direct democracy—ballot initiative, referendum, and town meeting—that pertain to planning and land-use regulations. This survey will help us learn more about the role of "direct democracy" in land-use regulations in the 50 largest U.S. metropolitan areas.

Even if you no longer work for the jurisdiction for which you responded in 2003, please answer the survey as it relates to that jurisdiction. All the questions concern direct democracy tools in the 1990s and early 2000s. If you feel uncomfortable answering the survey as it pertains to your former jurisdiction, please let me know and, if possible, provide contact information for a better potential respondent.

If you have any questions regarding this survey, please email me at dw86@cornell.edu or contact Professor Pendall at (607) 255-5561.

Thank you very much for your help.

Dehui Wei

Dehui Wei, Ph.D. Candidate
317 West Sibley Hall
Department of City and Regional Planning
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Ithaca, New York 14853

Your Information:

- Name of respondent: _____
- Title: _____
- Jurisdiction name: _____
- State: _____
- Jurisdiction type:
  __City/borough/village
  __Town/township/charter township
  __County
  __Other (please specify_____)
- Does your jurisdiction have a charter?
  __Yes
  __No
  __Don't know
  __Other (please specify_____)
- Zip code: _____
- Telephone number (with area code): _____
- Email: _____
- Date of response: _____

Instruction to Fill Out the Survey:
From the next page, you'll be asked about local provisions for each of the following types of direct democracy:

1. Town meeting: town meeting is a form of local government practiced in the New England region, but rare elsewhere. The general form is for local residents to gather periodically and act as a legislative body to enact local regulations, elect local officials, set local tax rates, and make appropriations for local purposes through voting.

2. Ballot initiative: a ballot initiative allows citizens to enact new charter provisions or ordinances by collecting signatures on a petition for eventual consideration as a ballot measure. The voter response may be binding or non-binding on local government.

3. Legislative referendum: legislative referendum requires the local governing body to place charter/home rule changes and bond issues on the ballot for voter approval or rejection. The results may be binding or non-binding on local government.

4. Popular referendum: popular referendum allows citizens to collect signatures on a petition to place on the ballot any charter, ordinance, or home rule change that has been adopted by the local government before the change can take effect. The results may be binding or non-binding on local government.

Please fill out the survey even if your jurisdiction does not have any of the provisions.

1. Town Meeting

- Is town meeting* used in your jurisdiction?

__Yes-open town meeting**
__Yes-representative town meeting**
__No
__Don't know
__Other (please specify_____)

*Town meeting is a form of local government practiced in the New England region, but rare elsewhere. The general form is for local residents to gather periodically and act as a legislative body to enact local regulations, elect local officials, set local tax rates, and make appropriations for local purposes through voting.
**There are two forms of town meeting: open town meeting and representative town meeting. In open town meeting all registered voters can participate and vote, while in representative town meeting the citizens elect town meeting members by precinct to represent them and vote on the issues for them.

- How many times is a town meeting held in your jurisdiction ANNUALLY?

_____

- Can decisions on local COMPREHENSIVE PLANS, PLANNING REGULATIONS, and/or ZONING RULES (ordinances, by-laws, resolutions, etc.) be made in town meeting?

__Yes
__No
__Don't know
__Other (please specify_____)

2. Initiative

- Are citizen ballot initiatives* allowed in your jurisdiction for at least some local actions?

__Yes
__No
__Don't know
__Other (please specify_____)

*A ballot initiative allows citizens to enact new charter provisions or ordinances by collecting signatures on a petition for eventual consideration as a ballot measure. The voter response may be binding or non-binding on local government.

- Are citizens of your jurisdiction allowed to use an initiative to adopt or change COMPREHENSIVE PLANS, PLANNING REGULATIONS, and/or ZONING RULES (ordinances, by-laws, resolutions, etc.), rather than charters and home rules?

__Yes
__No
__Don't know
__Other (please specify_____)

- How many times between 1990 and 2002 (inclusive) did citizens place initiatives on the ballot that would change your jurisdiction's PLANNING REGULATIONS or ZONING RULES?

__0
__1-5
__6-10
__>10
__Don't know

- How many of the initiatives included in your previous question were passed by the voters?

__0
__1-5
__6-10
__>10
__Don't know

3. Legislative Referendum

- Is legislative referendum* required in your jurisdiction for at least some local government decisions?

__Yes
__No
__Don't know
__Other (please specify_____)

*There are two types of referendum--legislative referendum and popular referendum. Legislative referendum requires the local governing body to place charter/home rule changes and bond issues on the ballot for voter approval or rejection. Popular referendum allows citizens to collect signatures on a petition to place on the ballot any charter, ordinance, or home rule change that has been adopted by the local government before the change can take effect. The results may be binding or non-binding on local government. This question asks specifically about the former.

- Is your local governing body required to use legislative referendum to adopt or change local COMPREHENSIVE PLANS, PLANNING REGULATIONS, and/or ZONING RULES (ordinances, by-laws, resolutions, etc.)?

__Yes
__No
__Don't know
__Other (please specify_____)

- How many times between 1990 and 2002 (inclusive) did your government, not the voters, place PLANNING REGULATIONS or ZONING RULES on the ballot box for voter approval as required for legislative referendum?

__0
__1-5
__6-10
__>10
__Don't know

- Among the number of times you answered to the previous question, how many times have citizens rejected city council's decisions in legislative referendums?

__0
__1-5
__6-10
__>10
__Don't know

4. Popular Referendum

- Is popular referendum* allowed in your jurisdiction for at least some local government's decisions?

__Yes
__No
__Don't know
__Other (please specify_____)

*Popular referendum allows citizens to collect signatures on a petition to place on the ballot any charter, ordinance, or home rule change that has been adopted by the local government before the change can take effect. The results may be binding or non-binding on local government.

- Are citizens of your jurisdiction allowed to use popular referendum to vote on local COMPREHENSIVE PLANS, PLANNING REGULATIONS, and/or ZONING RULES (ordinances, by-laws, resolutions, etc.) enacted by your government?

__Yes
__No
__Don't know
__Other (please specify_____)

- How many times between 1990 and 2002 (inclusive) have your citizens challenged city council-enacted PLANNING REGULATIONS or ZONING RULES through popular referendum on the ballot box?

__0
__1-5
__6-10
__>10
__Don't know

- Among the number of times you answered to the previous question, how many times have citizens overturned local government's decisions through popular referendums?

__0
__1-5
__6-10
__>10
__Don't know

5. Comments

If you have any comments, please write them below:

Thank you very much. I really appreciate your help.

Dehui Wei

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Appendix B. APA Chapter Vice-President Email Survey Instrument

Dear Sir or Madam:

My name is Dehui Wei, a Ph.D. candidate in the Department of City and Regional Planning at Cornell University. I am writing to ask you questions regarding the nature of local provision for initiative—direct or indirect but not including referendum—in the state where your chapter or section is located.

My study looks at the relationship between growth management policy restrictiveness and access to direct democracy in US municipalities and counties. The initiative, a tool of direct democracy, is one of the most important focus points in my study. I have some general information on whether local residents are allowed to use initiatives, but this information does not distinguish whether they can use initiatives to pass a zoning ordinance amendment, growth management ordinance, or other ordinance on land-use planning. I have good information about referendum, in which local residents can approve or reject a decision made by the elected officials, and I do not need more information about that. Thus I am asking for your help to answer these two questions:

First, are local residents allowed to use initiative to change or adopt planning regulations and/or zoning ordinances other than bond issues, charter amendments, or home rule changes, if there is provision for initiative in municipalities in your state?

Second, would you say that in your state initiatives on planning, growth management, and zoning issues have been proposed in more than half of jurisdictions, between a quarter and a half, less than a quarter, or none at all?

Thank you very much. I appreciate any of your help.

Dehui Wei

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Ithaca, New York 14853

Appendix C. The 2001 ICMA Municipal Form Survey Instrument

777 North Capitol Street, NE
Suite 500
Washington, DC 20002-4201
http://icma.org

Municipal Form of Government, 2001

Municipal Form of Government, 2001
Trends in Structure, Responsibility, and Composition

August 2001

Dear Municipal Clerk:

The International City/County Management Association (ICMA) has conducted a Form of Government Survey for more than thirty years. This survey gathers the most comprehensive information available on form of government, election systems, provisions for referendum/recall, and term limits. In addition, information on characteristics of the local governing body is collected in this survey. A summary of the results will be available on ICMA's web site (http://icma.org) after the data have been tabulated.

Please contribute to this significant body of knowledge by completing the survey and returning it in the enclosed postage-paid envelope within three weeks. Your participation is greatly appreciated.

Sincerely,

William H. Hansell, Jr.
Executive Director, ICMA

Definitions:

The term **municipalit**y refers to cities, towns, townships, villages, and boroughs.

The term **council** refers to an elected body whose members may be called council members, aldermen, selectmen, freeholders, trustees, commissioners, or a similar title.

The **chief appointed official** of the local government is often referred to as city manager, chief executive officer, city administrator, chief administrative officer, town administrator, village manager, or a similar title.

The **chief elected official** of the local government may have the title of mayor, president, board chair, etc.

1. Indicate your current form of government as defined by your charter, ordinance, or state law. (Check only one.)

a. **Mayor-Council** Elected council or board serves as the legislative body. The chief elected official is the head of government, with significant administrative authority, generally elected separately from the council.
b. **Council-Manager** Elected council or board and chief elected official (e.g., mayor) are responsible for making policy. A professional administrator appointed by the board or council has full responsibility for the day-to-day operations of the government.
c. **Commission** Members of a board of elected commissioners serve as heads of specific departments and collectively sit as the legislative body of the government.
d. **Town Meeting** Qualified voters convene to make basic policy and to choose a board of selectmen. The selectmen and elected officers carry out the policies established by the government
e. **Representative Town Meeting** Voters select citizens to represent them at the town meeting. All citizens may attend and participate in debate, but only representatives may vote.

2. How is your municipality's structure or form of government established? (Check only one.)

a. Charter
b. State law
c. Local ordinance
d. Council resolution
e. Other (Please specify.)_____

3. Does your municipality have the position of chief appointed official? (The chief appointed official of the local government is referred to as city manager, chief executive officer, city administrator, chief administrative officer, town administrator, village manager, or a similar title.) a. Yes b. No

A. If your municipality does have the position of chief appointed official, what action established the position? (This question refers only to the establishment of the position, not to the person or group that does the hiring.)

a. Charter
b. State law
c. Local ordinance
d. Council resolution
e. Chief elected official created position
f. Other (Please specify.) _____

B. If your municipality does have the position of chief appointed official, who appoints the chief appointed official?
a. Chief elected official c. Combination of chief elected official and council
b. Council d. Other (Please specify.) _____

4. Who has the independent authority to develop and make recommendations for the budget submitted to the council? (The term "develop" means that the person has responsibility for content of the budget.)
a. Chief elected official d. Chief financial officer
b. Chief appointed official e. Other (Please specify.) _____
c. Combination of chief elected official and chief appointed official

5. Are your department heads (Check only one.)
a. All elected b. All appointed c. Combination, some are elected and some appointed

A. If any of your department heads are appointed, who appoints them?
a. Chief elected official d. Council/board of selectmen
b. Chief appointed official e. Other (Please specify.) _____
c. Combination of chief elected official and chief appointed official

6. Does your municipality have a provision for

A. **Initiative?** 1. Yes 2. No

Initiative allows citizens to place charter, ordinance, or home rule changes on the ballot by collecting a required number of signatures on a petition.

1. If yes, which of the following initiative processes does your municipality provide? (Check all applicable.)

a. **Indirect:** Requires that before any charter, ordinance, or home rule change proposed by citizens through a petition process is placed on the ballot for vote, the council must consider it. Vote results are binding on the local government.

b. **Direct:** Requires that any charter, ordinance, or home rule change proposed by the citizens through a petition process must be placed directly on the ballot for a vote. Vote results are binding on the local government.

c. **Non-binding initiative:** Allows citizens to place on the ballot a question for voter approval or rejection. The voter response is non-binding on the local government.

B. **Legislative referendum?** 1. Yes 2. No

Legislative referendum allows the council to place any question on the ballot for voter approval or rejection. The results may be binding or non-binding.

If yes, which of the following items must be placed on the ballot for voter approval (Check all applicable.)

a. Local bond measures
b. Proposed charter amendments
c. Proposed ordinances
d. Proposed home rule changes
e. Other _____

C. **Popular referendum** 1. Yes 2. No

Allows citizens to collect signatures on a petition to place on the ballot any charter, ordinance, or home rule change that has been adopted by the local government before the change can take effect.

D. **Recall** 1. Yes 2. No

Allows citizens to collect signatures on a petition to place on the ballot a question of whether an elected official should be removed from office before the expiration of his/her term.

7. Since January 1, 1996, have there been any attempts to change your municipality's structure or form of government (e.g., change from at-large to ward or district elections or add or eliminate the position of chief appointed official, etc.)? a. Yes b. No

A. If yes, approximately how many attempts have been made to change your municipality's structure or form of government since January 1, 1996? _____

B. Check each item that describes the proposed change(s) and indicate whether the change(s) was approved.

Attempted change	Change was proposed	Not approved	Approved	Year approved
1. Change from at-large to ward or district elections				
Change to a mixed system with some at-large and some ward or district elections				
Change the mix between the number of council members elected at large and the number elected by ward or district				
4. Increase the number of council or board members				
5. Decrease the number of council or board members				
6. Change the method of election of the chief elected official				
7. Increase in powers/authorities of the chief elected official				
8. Decrease in powers/authorities of the chief elected official				
9. Add the position of chief appointed official (the appointed professional administrator)				
10. Eliminate the position of chief appointed official (the appointed professional administrator)				
11. Change who appoints the chief appointed official from (enter the previous appointment authority) _____ to _____(enter proposed)				
12. Change the form of government				

a. If a change in form of government was proposed, what was the proposed change? (Place a check in the box in the "From" column that indicates the original form and a check in the box in the "To" column that indicates the proposed form.)

From	To
1. Mayor-council	6. Mayor-council
2. Council-manager	7. Council-manager
3. Commission	8. Commission
4. Town meeting	9. Town meeting
5. Representative town meeting	10. Representative town meeting

CHIEF ELECTED LOCAL GOVERNMENT OFFICIAL/MAYOR/BOARD CHAIR

The chief elected official of the local government may have the title of mayor, president, board chair, etc.

8. Is the position of chief elected official in your local government officially full-time or part-time? a. Full-time b. Part-time
9. How is your chief elected official selected? (Check only one.)
   a. Voters elect directly
   b. Council selects from among its members
   c. The council member receiving the most votes in the general election becomes the chief elected official
   d. Council members rotate into the position of chief elected official
   e. Other (Please specify.) _____
10. How long is the chief elected official's term of office? (Important: If the chief elected official is a member of the council, specify the term for the position of chief elected official, not of council member.) (Check only one.)
    a. 1 year b. 2 years c. 3 years d. 4 years e. Other (Please specify.) _____
11. Is there a legal limit on the number of terms allowed for the position of chief elected official?
    1. Yes 2. No (go to question 12)
    A. If yes, what is the maximum number of terms allowed by law?
    a. 1 term b. 2 terms c. 3 terms d. 4 terms e. Other (Please specify.) _____
    B. If yes, when was the term limitation for the position of chief elected official enacted?
    _____ (year)
    C. If yes, what authority limits the number of terms for the position of chief elected official? (Check only one.)
    a. Ordinance
    b. Charter
    c. State law
    d. Other (Please specify.) _____
12. Is the chief elected official a member of council, that is, does the chief elected official serve on the council? 1. Yes 2. No
    A. If yes, does the chief elected official receive supplemental compensation for these additional duties? 1. Yes 2. No
13. Under what circumstances does the chief elected official have the authority to vote in council meetings?
    a. On all issues b. Only to break a tie c. Never d. Other (Please specify.)
    _____
14. Does the chief elected official have the authority to veto council-passed measures? 1. Yes 2. No
    A. If yes, is a "super majority" vote of the council required to overturn the mayoral veto? 1. Yes 2. No
15. Does the chief elected official have the authority to (Check all applicable.)
    a. Assign council members to chair or serve on committees and make assignments to those committees
    b. Appoint citizens to serve on advisory or quasi-judicial authorities, boards, or commissions

c. Receive the annual budget developed by the chief appointed official and present the budget with comments and suggestions to the council for consideration
d. Make an annual report to the council and citizens on the state of the community
e. Initiate the hiring and/or involuntary termination of the chief appointed official

16. Since 1996 have any recall initiatives been filed against the chief elected official? 1. Yes 2. No
    A. If yes, were any successful? 1. Yes 2. No
17. How many staff work directly for the chief elected official?
    a. Full-time staff _____ b. Part-time staff _____

COUNCIL/BOARD OF SELECTMEN/TRUSTEES

The term **council** refers to the elected governing body of the local government. The elected body may be called the board of selectmen, trustees, aldermen, etc.

18. Does the political party affiliation of council candidates appear on the ballot in a local general election? 1. Yes 2. No
19. What is the current filing fee for running for a seat on the council? (If there is no fee, enter zero.) $_____
20. How many council positions are there on your council? _____ (Include the chief elected official if that position serves on the council. If the chief elected official is a member of the council, your answer to question 12 should be "yes.")
21. Are all of these council positions filled? 1. Yes 2. No A. If no, how many council positions are filled? _____
22. How many current council members are (Total number of council members should equal the total in question 20 if all are filled. If all are not filled, this number should equal the total in 21A.) a. Male _____ b. Female _____
23. How many current council members fall into the following age groups? (Total number of council members should equal the total in question 20 if all are filled. If all are not filled, this number should equal the total in 21A.)
    a. Under 22 _____
    b. 22-29 _____
    c. 30-39 _____
    d. 40-49 _____
    e. 50-59 _____
    f. 60 and over _____
24. How many current council members are (Total number of council members should equal the total in question 20 if all are filled. If all are not filled, this number should equal the total in 21A.)
    a. Native American _____
    b. Hispanic _____
    c. Asian or Pacific Islander _____
    d. White, not of Hispanic origin _____
    e. Black, not of Hispanic origin _____
25. How many current council members are in each of these occupational categories? (**Count members only once.** If any member has more than one occupation, include that person in the category where he or she spends the greatest amount of time. Total number of council

members should equal the total in question 20 if all are filled. If all are not filled, this number should equal the total in 21A.)

_____ a. Lawyers
_____ b. Other professionals (medicine, engineering, etc.)
_____ c. Business executives/managers
_____ d. Business/industry employees
_____ e. Service industry employees
_____ f. Farmers or ranchers
_____ g. Homemakers
_____ h. Teachers and other educational personnel
_____ i. Clergy
_____ j. Retired persons
_____ k. Other (Please specify.)_____

26. How many council members are selected by the following methods. (If none are elected by one of the methods, indicate zero.)(Number should equal the total in question 20.) a. Elected at large_____ b. Elected by ward or district_____
27. Indicate the length of term for council members. (Even if the chief elected official is a member of council, specify the length of term for other council members, not for the chief elected official.)
    A. Council members elected at large
        a. 2 years b. 3 years c. 4 years d. 6 years e. Other _____
    B. Council members elected by ward or district
        a. 2 years b. 3 years c. 4 years d. 6 years e. Other _____
28. Terms of office are (Check only one.) a. Staggered b. Concurrent
29. Is there a legal limit on the number of terms a council member may serve? a. Yes b. No

A. If yes, what is the maximum number of terms allowed by law? _____
B. When was the term limitation enacted? _____ (year)
C. By what authority is the number of terms limited? (Check only one.)
    1. Ordinance 2. Charter 3. State law 4. Other (Please specify.) _____

30. How many incumbents ran for reelection to council in the last general election? _____
    a. How many of those incumbents were reelected? (If none, enter zero.) _____
31. How is a council member's seat filled if it is vacated before the term has expired? (Check only one.)

a. Method depends on length of term remaining
b. Special election
c. Appointed by council
d. Appointed by chief elected official
e. Position left vacant until next regular election
f. Other (Please specify.) _____

32. Since 1996, have any recall initiatives been filed against council members? 1. Yes 2. No
    A. If yes, were any successful? a. Yes b. No
33. Are any council members (excluding the chief elected official) paid an annual salary or stipend for any of their services?
    1. Yes 2. No

A. If yes, please indicate the approximate annual dollar amount that your council members receive.
    1. Full-time council member $_____ 2. Part-time council member $_____

34. How often does the council meet in formal session? (Check only one.)

a. More than once a week e. Once a month
b. Once a week f. Less than once a month
c. Three times a month g. Other (Please specify.) _____
d. Twice a month

35. Does the council have standing committees (permanent bodies with set memberships and regularly scheduled meeting times) that consider specific policy matters? 1. Yes 2. No

A. If yes, approximately how many standing committees did the council have as of January 2001?
a. 1-2 standing committees d. 11-15 standing committees
b. 3-5 standing committees e. More than 15 standing committees
c. 6-10 standing committees

36. Does the council use citizen authorities, boards, or commissions? 1. Yes 2. No

A. If yes, are members 1. Elected 2. Appointed (Check all applicable.)
B. If yes, in what capacity do they serve? (Check all applicable.)
1. Advisory 2. Decision/policy making 3. Quasi-judicial
C. If yes, in which areas are they used? (Check all applicable in the list below.)

a. Growth	i. Civil service	q. Architectural review
b. Transportation	j. Libraries	r. Code enforcement
c. Zoning	k. Housing	s. Parks and recreation
d. Finance	l. Community-police relations	t. Ethics
e. Airports	m. Economic development	u. Charter review commissions
f. Art	n. Planning	v. Other (Please specify.)
g. Beautification	o. Environmental issues	_____
h. Cable TV	p. Historic preservation	

37. How many staff are employed by the council to work exclusively on council business?
a. Full-time staff _____ b. Part-time staff _____

38. When does your next fiscal year begin (i.e., 07/2001)?
Month _____ Year _____
Name: _____ Title: _____
Telephone number: _____ Email :_____

Thank you for completing the survey. Please return to:
Evelina Moulder, Director of Survey Research, ICMA
777 North Capitol Street, NE, Suite 500, Washington DC 20002-4201.

Appendix D. Restrictiveness of Growth Management Measures

Growth management policies can be evaluated at different levels from different perspectives. At one level we can evaluate individual measures while at the other level we can evaluate all the measures as a whole in a local jurisdiction. We can focus our attention to policy restrictiveness or stringency—the attempted level of limitation on growth or development. We can also focus on policy effectiveness—whether or not the policy or policies have reached their designated goals.

It is difficult, if not impossible, to compare individual measures' restrictiveness, either different measures within the same jurisdiction or the same measure across different localities, taking into account the nature of policies and local contexts in which policies are adopted and implemented. It is extremely hard to determine which one is stricter between an 8 units-per-acre zoning and a concurrency requirement of adequate public facilities or between an urban growth boundary including 20 years of developable land and an annual permit cap with 300-unit limitation. It is also hard to make judgment on which measure is more stringent between a 10 unit-per-acre zoning in Boston metropolitan area and a 20 unit-per-acre zoning in Seattle metropolitan area because of the regional difference in density preference and acceptance as well as other contexts.

However, it is promising to compare restrictiveness of all the growth management measures as a whole across municipalities. Different measures aim at controlling or managing different aspects of growth. Some measures will not necessarily attempt to restrict the amount of growth, but may change the intensity of development, shift its geographical focus, or motivate the provision of adequate facilities. Therefore, in general, the larger the number of growth management measures is, the more aspects these measures will focus. Furthermore, growth measures are cyclical in nature. For instance, if the enacted measures fail to contain the negative

effects of growth, the jurisdiction may attempt alternative strategies. Hence, the jurisdiction may add new measures to the existing policy pool as new kinds of growth problems become cogent or as prior measures fail to be effective and cause new problems (Glickfeld and Levine, 1992). As a result, a greater number of growth management measures could mean both a limit on more aspects of growth and a higher level of effort to control growth problems, the equivalent concept of restrictiveness.

However, some measures may not be counted due to their minimum contribution to growth limitation. I use "average restrictive potential" to filter them out. Only those measures with higher average potential in restricting growth will be taken into consideration and others with lower average restrictive potential will be ignored. The reason is simple—the others may not be able to restrict growth and thus make little contribution to overall growth management restrictiveness. In order to understand the concept of "average restrictive potential", we need to focus on policy effectiveness.

Policy effectiveness is different from restrictiveness. Effectiveness is usually evaluated based on empirical evidence while restrictiveness based on theoretical perception. In some cases, policies are viewed as effective if they have accomplished their goals—usually controlling the amount of growth or directing the location and timing of growth, while in other cases, policies are ineffective when they have not reached their expectations. Meanwhile, the latter cases can be further divided into two groups: policies that have certain side effects such as housing price increase, and policies that have no impacts at all. Effective policies and ineffective policies with side effects are thought as having higher average restrictive potential and thus making a difference in limiting growth in local growth arena.

However, we need be careful with above statements—in all the above cases the policies are integrated with local contexts in which the policies are drafted, enacted, and implemented. Only a strong policy is equipped with strict implementation measures, can it make a difference in restricting growth. Separated from its context, we are unable to assure whether or not a particular policy is effective. So the effectiveness and restrictive potential statements are really discussed in general trends or the average outcomes across municipalities.

In this part, I try to evaluate growth policies' overall restrictiveness in local jurisdictions and make possible the comparison of such policies across localities. I define local growth management policy restrictiveness as the total amount of growth management efforts used by a local government to control or restrict the amount, location, and timing of growth. A growth management policy restrictiveness index can then be set up by summing up the number of growth management measures with higher average restrictive potential in a local jurisdiction. Measures with lower average restrictive potential will be ignored from this study. I use the following approach to set up the restrictiveness index:

1. Growth management measures are first grouped into different categories.
2. Measures within each category are assessed based on their average restrictive potential in local growth. For simplicity, the average restrictive potential is divided arbitrarily into two types—high and low. A measure is assessed as having high average restrictive potential if the evidence is found from literature that, on average, the measure is effective, or ineffective but with substantial side effects related to growth, across municipalities. Otherwise, a measure is assessed as having low average restrictive potential.

3. The total number of measures with high average restrictive potential are summed up for each local jurisdiction and utilized as the restrictiveness index.

D.1 Grouping of Growth Management Measures

Along with the development of modern planning, growth management techniques are evolving and a variety of innovative measures have emerged. In a late 1980s California local jurisdiction survey, 907 different growth management and growth control measures were reported "on the books" in 443 local jurisdictions through the first quarter of 1989 (Glickfeld and Levine 1992). A vast number of growth management techniques are being used throughout the nation.

Attempt is made to organize various growth management techniques. Some measures may perform integrated functions and pursue together similar objects or goals, while some other measures may perform different functions and pursue different goals. Certain measures thus can be seen as occupying only one category of a jurisdiction's growth management effort. In Glickfeld and Levine's (1992) study of local growth measures in California, they distinct types of growth measures by performing a factor analysis of growth measures that local government tended to enact together. Interestingly, associations among types of measures is weak or nonexistent, with none of the pairs of measures achieving an intercorrelation higher than 0.26. This result provides empirical support for growth management measures' grouping or categorization.

However, I must admit that precise categorization is difficult because of two reasons. First, the functions and objectives of some measures are vague and they may not belong to any category or they could be assigned to multiple categories. Second, some techniques have multiple functions and it is hard to determine which one is the dominant one.

Based on their factor analysis, Glickfeld and Levine (1992) arrived at six categories (each is a factor) of growth measures that local governments tended to enact together (see Table D-1). However, urban limit line or greenbelt has a much smaller loading (0.419 compared with 0.854 and 0.846 for population growth caps and housing permit limitations respectively), or put in another way, a weaker association with the first factor—the population control category. Glickfeld and Levine (1992) point out that the weaker loading on the urban limit line or greenbelt can be partially explained by geographic regional differences. The three measures, population caps, housing caps, and urban limit lines do tend to be enacted together in coastal county jurisdictions. However, the majority of Central Valley jurisdictions enacting urban limit lines do not also enact population or housing caps. They further attribute the pattern difference to the different goals sought in these two geographic regions with the Central Valley jurisdictions focused on preserving agricultural lands through the urban limit line, while coastal jurisdictions use urban limit lines as much for growth rate control as for agricultural preservation. Therefore, in my study, I separate urban limit lines and greenbelts from population control category since both of them only function together with population and housing caps in limited jurisdictions and pursue different goals than those caps.

Table D-1. Glickfeld and Levine's (1992) Growth Management Categories

Categories	Measures
Population control	Housing permit limitations Population growth caps Urban limit line or greenbelt
Floor space control	Industrial square footage limitations Commercial square footage limitations
Infrastructure control	Residential infrastructure requirements Commercial/industrial infrastructure requirements
Zoning control	Rezone residential land to a less intense use Restricts permitted commercial/office building heights Residential downzoning Rezone commercial/industrial land to a less intense use
Political control	Required voter approval for upzoning Required council supermajority for upzoning
General control	Growth management elements of the General Plan

This separation in grouping effort can be further justified by Pendall, Martin, and Fulton (2002). In their article, they posit greenbelt and urban limit line (also termed urban growth boundary (UGB), blue line, or green line), together with urban service boundary (USB), under the concept of urban containment which is "simply an attempt to deliberately use their public land acquisitions, land-use regulations, and infrastructure investments to contain, influence, or direct growth to specific geographic locations." Urban containment policy seeks goals apparently different from those of population control measures.

Landis, Deng, and Reilly (2002) further strengthen the grouping of growth management measures. They divided growth management programs into five groups based on policy objectives. Zoning and environmental impact assessment target at multiple aspects of the development process, most of which are narrower in both scope and use. Urban growth boundaries, annexation limits, and sphere of influence adjustment procedures are all directed toward regulating the supply of land available for development. The objectives of housing and commercial space caps are primarily to limit the supply of buildings and thereby limit the impacts of related activities. The purpose of development impact fees and adequate public facilities ordinances (APFOs) is to minimize development's fiscal and public service impacts, while the purpose of linkage fees, inclusionary zoning, farmland protection ordinances and many types of environmental regulations is to minimize development's fiscal, social, and environmental side effects.

Since my study focuses on residential growth management, commercial and industrial measures are eliminated. With some further adjustments in terms, the grouping of growth management measures is resulted in the following six categories: Zoning ordinances and subdivision regulations, urban containment, public facilities regulations, pace of growth,

Institutional control, and other measures. For a detailed categorization of growth management measures, see Table D-2.

Table D-2. Categorization of Growth Management Measures

Categories	Measures
Zoning ordinances and subdivision regulations	Low-density zoning/high-density zoning, upzoning/downzoning, inclusionary zoning/exclusionary zoning, height limits, floor area ratio (FAR) regulations.
Urban containment	Urban growth boundaries (UGBs)/urban limit lines (ULLs)/green lines/blue lines, greenbelts, urban service areas (USAs)/urban service boundaries (USBs), annexation limits.
Public facilities regulations	Adequate public facilities ordinances (APFOs), mandatory dedications, negotiated exactions, impact fees, improvement taxes, real estate transfer taxes, special districts, tax increment financing.
Pace of growth	Building permit caps, population growth caps, moratoria on issuance of building permits/subdivision.
Institutional control	Voter approval requirements, super-majority vote requirement in city council, review streamlining, one-stop permitting.
Other measures	Growth management elements of the General Plan, affordable housing programs (such as housing linkage fees, affordable housing density bonuses), farmland protection ordinances (Right-to-farm, differential tax assessments, state income tax credits, capital gains taxes, voluntary districts, agricultural/forest buffers, rural land reassembly).

D.2 Growth Management Measures' Average Restrictive Potential

It is important to bear in mind that it is difficult for a growth management measure to be assessed in terms of restrictiveness unless we integrate the policy's contents with its contexts. Only a strong policy is equipped with strict implementation measures, can it make a difference in restricting growth. So the term "restrictive potential" are discussed in general trends the average effects and side effects of a particular growth management measure has on limiting growth across municipalities.

Both critics and advocates of local growth management policies frequently assume that such policies are effective in holding down growth rates. Critics of such policies further maintain that efforts to restrict housing supply lead to increased housing prices (Advisory Commission on Regulatory Barriers to Affordable Housing, 1991). However, results from empirical studies do

not support such definitive perceptions. The relevant literature indicate that many growth management measures have mixed effects on growth and housing prices, while others are not effective at all (Baldassare and Protash 1982, Donovan and Neiman 1995, Glickfeld and Levine 1992, Landis 1992, Levine 1999, Logan and Zhou 1989, Mercer and Morgan 1982, Staley 2001, Warner and Molotch 2000). Nevertheless, several studies do provide evidence as a foundation for the assessment of growth management measures' average restrictive potential. In the following sections, I summarize the assessment of measures in each policy group.

D.2.1 Zoning Ordinances and Subdivision Regulations

This category of measures includes low-density zoning/high-density zoning, upzoning/downzoning, inclusionary zoning/exclusionary zoning, height limits, and floor area ratio (FAR) regulations. These measures are the most traditional approach to land use regulation and are directed at multiple aspects of the development process. Not in all situations do measures here qualify as growth management policies. Only those that can fulfill certain purposes of growth management efforts, such as limiting growth or redirecting growth to desirable areas, will be included into growth management family.

D.2.1.1 Zoning Ordinances

Zoning ordinance, the oldest tool regulating land use type and intensity, is probably the most common approach to manage growth. Between 1993 and 2004, over 95 percent of jurisdictions nationwide used either a plan or zoning or both (Pendall et al. 2004). Moreover, Midwestern jurisdictions that did not plan or adopt zoning were townships that had the option to regulate but relied instead on their counties, whose plans and zoning either stand behind or supersede local regulations in Ohio, Illinois, Wisconsin, and Minnesota. The Northeast and Midwest have the

highest incidence of zoning ordinances that impose low density ceiling, while the West is the most accommodating area for high-density zoning (Pendall et al. 2004).

Pendall et al. (2004) point out that, at the national level, the share of surveyed jurisdictions (700+) with very low-density zoning—prohibiting housing at 8 or more dwellings per acre—was 16 percent in 1993 and 17 percent in 2004, and the share of respondents saying they had reduced the maximum permitted density by over 10 percent in the previous five years was 8 percent in both years. At the other end of the density scale, 28 percent of the repeat respondents accommodated densities over 30 dwellings per acre in 1994, compared with 26 percent in 2003; the share that claimed an increase of over 10 percent in their permitted maximum density climbed modestly from 7 to 9 percent between the two survey years.

Low-density zoning, especially extreme low-density, if properly implemented, is the most stringent approach in this group in limiting residential development. Low-density zoning and downzoning, often existing in affluent suburbs, require that higher-density (and therefore less expensive) housing construction is not permitted to begin with. Some communities have never experienced serious growth control movements in recent decades, because their zoning traditions make it prohibitive or impossible to develop large quantities of housing (Lewis and Neiman 2002). In this way, local growth seems more incremental, and local streets and services are less likely to be negatively affected by growth. Therefore, growth controversy is less likely to occur.

Low-density zoning may well have had a greater effect on residential building rates than the growth management policies sometimes passed in desperation after a community has begun experiencing growth-related conflicts. “it is still by placing undeveloped land into large-lot zones that communities most commonly control population growth and land conversion. This practice ensures that land either cannot be developed economically, or can be used only for the most

expensive type of structures" (Dowall 1984). Pendall (2000) finds that municipalities with low-density zoning patterns experience lower levels of rental housing development, and with fewer entry-level housing options add fewer minorities to their populations than otherwise similar cities without such zoning. In another analysis, still using the same data set, Pendall (1999) suggests that low-density zoning contributed to sprawl by displacing growth outward. Neiman (1980) and Farley (1964) present evidence indicating that, over time, communities tend to retain their initial status difference vis-à-vis other localities, which may well be a function of initial zoning.

It is worth mentioning that not only large-lot, low-density zoning might reduce the supply of land for residential development. If localities over-zone for other purposes, including commercial and retail uses, there is also a potential zoning effect that adversely affects housing supply (Lewis and Neiman 2002). Levine (1999) in a study of 490 California cities and counties found that local growth management policies "significantly displaced new construction," and the following four measures had the strongest effects: rezoning of land from residential to agricultural or open space, rezoning of land from commercial or industrial to less intense use, residential downzoning, and reduction in permitted heights of commercial or office buildings.

In contrary, high-density zoning, upzoning, and inclusionary zoning may have shallow effects on limiting growth, and sometime even embrace residential development. They are in the other end of the restrictive continuum in this group.

D.2.1.2 Subdivision Regulations

Subdivision regulations, such as height and area floor ratio (AFR) limits, materials used in housing construction, can also put upward pressure on the cost of new housing and reduce housing construction. These regulations typically have very worthy goals relating to the public's health, comfort, and safety, on the margin such standards do reduce the amount of usage space

and the ability of builders to produce low-cost housing units (Lewis and Neiman 2002). Thus, these regulations have restrictive potential, but to a less extent compared to low-density zoning and downzoning.

D.2.2 Urban Containment

Broadly speaking, urban containment covers a wide variety of tools shaping the geographical pattern of urban growth, including not just regulation but also public ownership of land and policies regarding the timing and sequencing of public infrastructure construction. In this study, I adopt its narrow scope defined as a set of land use regulations that prohibit urban development outside a certain boundary. This group includes urban growth boundaries (UGBs)/urban limit lines (ULL)/green lines/blue lines, greenbelts, urban service areas (USAs)/urban service boundaries (USBs), annexation limits. These measures aim at two primary purposes—allocating compact and contiguous growth into areas with cost-effective public facility provision and meanwhile protecting resource lands and environmental resources outside those areas. These measures intervene spatial patterns of development and seek a wide range of goals including preservation of natural land, farmland, and resource land, and efficient utilization of urban land and infrastructure (Pendall et al. 2002).

D.2.2.1 Urban Growth Boundaries (UGBs)/Urban Limit Lines (ULLs)/Green Lines/Blue Lines

Nationally the adoption of urban growth boundaries appears to have been slow. Along with building permit caps and adequate public facilities ordinances, urban growth boundaries have been embraced most enthusiastically in the West, suggesting that Western jurisdictions, which accommodate substantial density in their zoning ordinances, must also regulate the impacts of the density the permit (Pendall et al. 2004).

Urban growth boundaries constrain the geographical expansion of urban areas largely through the use of regulatory techniques, such as zoning. Property inside the boundary which is designated for urbanization will be zoned for urban use; property outside the boundary will be zoned for rural uses (Pendall et al. 2004). UGBs have been increasingly promoted by land-use planning advocates as a useful and effective tool in constraining urban growth. The growing support for UGBs also reflects the high profile of the UGB system in Oregon and especially in the Portland metropolitan area, which many planning advocates have pointed to as a model of "good planning".

The Oregon Land Conservation and Development Act (LCDA) of 1973 is probably the strongest state growth management law in the nation. It connected state and local planning programs by requiring that local comprehensive plans be consistent with statewide goals and also created the state Land Conservation and Development Commission (LCDC). It also requires the drawing of urban growth boundaries around all the state's cities and a metropolitan growth boundary around the Portland region. Oregon's UGBs do restrict the outward geographical expansion of the state's urbanized areas, but they are also required to maintain a rotating supply of buildable land. In a side by side comparison of the Atlanta and Portland metropolitan areas, however, Nelson (2000) attributes recent increase in the price of housing in the Portland region to improved amenities and development quality rather than to the well-known urban growth boundary, while he attributes Portland's ability to maintain (and in some cases improve) its quality of life characteristics to the regional urban growth boundary.

California does not have a state law mandating growth management or urban growth boundaries. Survey research suggests that boundaries are more prevalent among counties than among cities, partly because most undeveloped land lies within county unincorporated areas

(Fulton et al. 1996). City boundaries are less common but probably receive more publicity because they are often passed by voter initiative and they tend to regulate outward geographical expansion more strictly. The experience of Ventura County and Contra Costa County reveal the implementation issues associated with a locally driven urban containment system.

In 1998 voters in Ventura County and several of its cities created a countywide system of urban containment by placing growth boundaries around the cities and subjecting future rezoning of agricultural and open space land to a vote. As a result, according to estimates prepared by the University of Southern California and Solimar Research Group, most developable lands are directed outside growth boundaries. At the same time, the state's lack of an Oregon-style growth management law means neither the county nor its cities must estimate or manage the land supply inside the boundary in order to account for future demand—and they have not done so. Fulton et al. (2001) warn that current plans will likely hold construction in the vicinity of 33,000 units, compared with the target of approximately 60,000 units of future housing construction as required by state housing law.

In 1990, Contra Costa County voters rejected a stringent, citizen-sponsored UGB initiative and instead approved a county-sponsored alternative. The alternative permitted some growth in unincorporated areas, but instructed the Board of Supervisors to create an "urban limit line" (ULL) and set aside 65 percent of the county's territory as open space. In 2000, the county shrank the boundary, and the revised ULL conflicts with the spheres of influence for some cities as determined by the county LAFCO, meaning some pro-growth cities may not be able to expand their developed area as far or as rapidly as they had previously expected. This situation has led to a major dispute between these cities and the county (Fulton 2000).

Overall, UGBs limit the spatial growth of the cities that adopt them, but not necessarily the numerical amount of growth. In a California peer-comparison study, Landis et al. (2002) compare case study cities with certain growth management measures to peer cities without such measures and find that, collectively, 1990-2000 population and housing unit growth rates in the four case study cities with UGBs (or ULLs) exceeded their peers by 20 percent and 38 percent respectively. Compared individually, the differences were even greater. UGBs also have no effects on rental housing construction and racial composition (Pendall 2000). Levine (1999) finds that UGBs do not appear to significantly shift development between communities. However, this result contradicts Landis et al.'s finding in California. As implemented in California so far, UGBs do seem to be successfully redirecting growth from the urban fringe back into interior areas (Landis et al. 2002).

D.2.2.2 Greenbelts

Only a few communities in the United States have conscious greenbelt policies—the most prominent being Boulder, Colorado. However, many other metropolitan areas have growth patterns that are the result of a de-facto greenbelt created by publicly owned open space of one kind or another. Many metro areas in the West, for example, have been shaped by the amount and location of federal land holdings, which have begun to serve as de facto greenbelts as Western metro areas have expanded geographically (Hollis and Fulton 2002). In some cases, topographical features may be so large and imposing that they create de facto greenbelts whether or not the land is publicly owned or strictly regulated. This is true, for example, of many Western metro areas surrounded by mountains and metro areas on the Atlantic Coast of Florida, which have begun to butt up against the Everglades.

The longest experiment in "greenbelt" planning in the United States has occurred in Boulder, Colorado, which has used both regulation and public acquisition to establish and maintain a "blue line" around the city for more than forty years. There is little question that the Boulder approach has had both beneficial and harmful effects. One the one hand, it has encouraged a systemic approach to protecting open space that has matched land acquisition and land regulation in classic "greenbelt" fashion. On the other hand, the fragmented system of land-use planning in the Boulder area has permitted one city to pursue an aggressive policy without requiring regional collaboration or coordination. Boulder's strategy has created satellite communities. But those communities are not self-contained; rather, they are mostly bedroom suburbs for Boulder, creating a jobs-housing imbalance that has meant workers must commute across the greenbelt to work.

D.2.2.3 Urban Service Areas (USAs)/Urban Service Boundaries (USBs)

Urban service areas are tools designed to link infrastructure and growth, most notably APFOs or "tiering" mechanisms. Urban service areas resemble urban growth boundaries in the sense that they create geographical limits on urban growth (at least urban growth that requires the extension of public water and sewer systems). But they also tend to be more flexible and easier to move because they tend to be concerned with the geographical sequencing of growth rather than its constraint. However, in many cases APFOs or tiering mechanisms are adopted independently, absent an overall urban service area strategy. Much of the motivation for adopting these policy tools was financial, not geographic—they sought to reduce the cost of infrastructure to the communities hosting the growth. As a result, they do not always shape growth geographically in an overt fashion.

I leave the APFOs for next section and focus mainly on the tier system here. Midway between the adequate public facilities approach, which does not necessarily envision any ultimate boundary for growth, and the permanent greenbelt approach, tier systems use infrastructure capacity, current levels of development, and assessments of rural resource viability to identify areas that are currently developed, areas where development should be avoided, and areas for new growth over a given time period. Among the best-known tier systems are those in Minneapolis-St. Paul, San Diego, and Palm Beach County. Maryland's Smart Growth program may be the newest and most closely watched statewide tier program. Maine and Wisconsin recently overhauled their state planning legislation to encourage an urban service area approach (on Maine, see American Planning Association 2002; on Wisconsin, see Wisconsin Office of Land Information Services 2001).

Lets take Minneapolis-St. Paul Urban Service Area and San Diego's Tier System as example. Despite unusually strong powers, considerable evidence indicates that the designated Urban Service Area in Minneapolis-St. Paul has not curbed sprawl in the region (Fulton, Pendall et al. 2001). In some ways, as compared with the Minneapolis-St. Paul System, the San Diego system succeeded. It boosted in-town density to, and perhaps beyond, the maximum levels possible within the established infrastructure system; only then did the City Council decide to relax controls on outlying areas. But the San Diego system also confirmed the difficulty of maintaining the political equilibrium of a system that seeks to simultaneously direct growth to certain areas and maintain a pace of infrastructure construction that can truly accommodate new growth.

Research on greenbelts in London (Hall et al. 1973, Munton 1983, Simmie 1993, and Pennington 2000) and in Seoul (Bae 1998, Cho 1997, Choi 1993, and Kim and Kim 2000),

UGBs in Portland (Downs 2002, Dunphy 1998, ECO Northwest 1990, Ehrenhalt 1997, Knaap 1985, Metro 1997, Metro 2000a, Metro 2000b, Phillips and Goodstein 2000), and tier system in San Diego (Calavita 1997, Fulton 1997, Mandelker 1999) all suggests that a containment boundary that is tightly drawn and hard to change encourages more dramatic and rapid density increases, especially if policies are flexible enough to accommodate new development inside the boundary. Conversely, very remote boundaries, such as those maintained by many Tennessee counties today, will not necessarily reduce housing space, dramatically raise housing costs, or encourage leapfrog development. However, research from around the world suggests that tight urban containment policies, especially greenbelts, will inevitably drive some urban growth completely beyond the land preservation area surrounding the metropolis and so stimulate what critics call "leapfrog" development.

D.2.2.4 Annexation Limits

The last one, annexation limits limit growth. Most new development in California occurs at the urban fringe. Accordingly, we would expect regulations that limit municipal annexation also limit population growth and housing construction. This is indeed the case—Landis et al. (2002) found that, compared collectively, population and housing growth rates in three case study cities with annexation limits during the 1990s were about 60 percent of the level of their peers. It seems that annexation limits is the most stringent measure in this group.

D.2.3 Public Facilities Regulations

This set of measures function through adequate public facilities ordinances (APFOs) and a set of exactions such as mandatory dedications, negotiated exactions, impact fees, improvement taxes, real estate transfer taxes, special districts, tax increment financing. Among all the exaction measures, impact fees are not immediately employed but are more common among localities.

These measures tend to focus on spatial pattern and timing of development. Their primary purposes are to encourage efficient urban development pattern rather than to control growth.

D.2.3.1 Adequate Public Facilities Ordinances

APFO programs were pioneered most famously in Ramapo, New York; since then many other local governments have experimented with them. The concept of adequate public facilities for new growth became the centerpiece of Florida's statewide growth management system in 1985, and Washington's 1990 growth management statute adopted the APFO concept for developing areas within urban growth areas.

Pendall et al. (2004) observe that APFOs anticipate and avoid the shortages that often prompt local governments to respond with permit caps and moratoria. But partial evidence suggests that APFOs became less popular in the 1990s. This trend counters the common expectations, given state concurrency mandates in Florida and Washington, increased acceptance of "pay as you grow" attitudes in local governance, and increased concern about suburban sprawl more generally. Only 25 percent of the 363 repeat respondents to our APFO questions had these ordinances in 2003, compared with 30 percent in 1994; declines were observed in all four regions. The South and West continue to lead the Northeast and Midwest in adoption of APFOs, with Florida and Texas metros as well as Phoenix and Seattle ranking high in their adoption. But again, the use of APFOs declined or stabilized in the California metro areas. The decline of APFOs in the Midwest is largely attributable to declining use in Chicago. It is possible that local governments are turning increasingly to impact fees instead of adequate public facilities ordinances because APFOs require more administrative discretion and monitoring than impact fees. Impact fees will be discussed later.

APFO is not to limit growth, at least not explicitly. Rather, it is to help cities cope with the fiscal and infrastructure impacts of growth. APFOs require that infrastructure be in place before development is permitted. APFO programs are implemented at the municipal or county level, sometimes based on guidance or mandates from state law, and the facilities and services are usually provided by local governments. They do not necessarily impose an ultimate outer limit on growth, but they do change the geographical calculus of growth—some evidence suggests they do increase densities more than urban growth boundaries (Pendall et al. 2002).

In the peer-comparison study, Landis et al. (2002) find that cities with residential APFOs actually grew faster during the 1990s than their collective and individual peers. They further conclude that, given the even larger case-peer differences in housing construction rates, one might go so far as to conclude that the principal effect of residential APFOs is to make the cities that adopt them "safe" for additional development (Deakin 1989). However, In a national study comparing local land use regulations, housing production, and community economic and demographic characteristics, Pendall (2000) found no strong connection between adequate public facilities ordinances and rental housing construction or racial composition. Using the same data, Pendall (1999), as well as Levine (1999), suggests that APFOs did not displace growth and in some cases encouraged more compact growth forms. Levinson's evaluation (1997) of Montgomery County, Maryland's very stringent adequate public facilities ordinance and travel demand management programs suggest that they have not been very effective either in matching the provision of transportation infrastructure to private development, or in changing traveler behavior to reduce trip lengths and congestion. Levinson blames this failure on the tendency to proscribe particular regulatory solutions rather than using pricing strategies such as impact and congestion fees.

D.2.3.2 Impact Fees

Exaction measures shift financial burden from local government to alternative sources (developer exaction, impact fees, special financing districts, and development taxes)—a shift of the cost of new infrastructure from the general public to the new developments that create the need. The method of financing involves a policy choice between two competing principles: ability-to-pay or benefit received (Nelson and Duncan 1995).

Pendall et al.'s (2004) 1994 survey did not ask about impact fees, but among the repeat respondents exactly half of the 356 respondents reported that they had impact fees, a rate double that of APFO adoption. Only two metro areas, Detroit and Cincinnati, had fewer respondents with fees than with APFOs.

Studies find that direct cost measures such impact fees may have little effect on limiting growth. On a national level, an analysis by Mayer and Somerville (2000) of housing construction in 44 U.S. metropolitan areas between 1985 and 1996 found that housing starts were 45 percent lower in metropolitan areas dominated by jurisdictions with more stringent land use controls. However, supply levels were not affected by direct cost measures, but by measures that lengthened the approval process or made it more complex. Pendall (1999), through a national study, suggests that impact fees did not displace growth and in some cases encouraged more compact growth forms.

D.2.4 Pace of Growth

This set of measures includes building permit caps, population growth caps, and moratoriums on issuance of building permits/subdivision. They allow communities to buy time for the development and adoption of more sophisticated and permanent growth management solutions. Caps set absolute upper limits for annual housing development or population growth, while

building moratoria exert an outright stop in issuance of certain building permits. They were adopted in consideration of locally desired rates of growth usually based on local carrying capacity limitations and facility adequacy was a secondary consideration. They are growth control, rather than growth management strategies. When caps are adequately determined, growth caps can be very strict on local residential development, while temporary moratoria only shift growth from time to time.

D.2.4.1 Building Permit Caps and Population Growth Caps

According to Pendall et al. (2004) survey, building-permit caps, which pioneered in California, appear to be waning in popularity there while gaining ground elsewhere. The share of jurisdictions with permit caps dropped in all three of the California metro areas to levels as high as 15 percent in the San Francisco Bay Area and zero in San Diego, after levels between 10 and 20 percent for all three metro areas in 1994. But in metropolitan Denver, 8 of our 17 repeat responders had permit caps in 2003, compared with just 3 in 1994. Outside Denver, permit caps have become slightly more popular in metropolitan Boston, where four of the 44 repeat responders have them, and Washington-Baltimore, with three of 24 respondents. Some states preclude local governments from imposing permit caps, but we lack a complete list of such prohibitions. Building-permit caps sometimes respond to shortages in infrastructure capacity, which also often prompt local governments to impose building moratoria. Moratoria appear to be on the rise in most of the United States, though only five percent of repeat respondents had moratoria in 2003. There is no clear regional pattern here, with over 15 percent of jurisdictions in Minneapolis, Washington, Milwaukee, and San Diego subject to moratoria in 2003.

When caps are adequately determined, growth caps can be very restrictive on local residential development. In the peer-comparison study, Landis et al. (2002) conclude that annual housing

caps are the most stringent form of growth control. The average population growth rate during the 1990s in the seven case study cities with annual housing caps was 17.6 percent, compared to 25.6 percent for their collective peers. Surprisingly, case-peer differences were much smaller in the case of housing than population. Given differences in household size, one may infer from these results that housing cap programs limit the construction of single-family homes more than apartment units. Still in the national study, Pendall (2000) found strong correlation between building cap programs, reduced rental housing construction, and lowered proportions of Black and Hispanic residents. However, in another analysis, Pendall (1999) suggests that building permit caps contributed to sprawl by displacing growth outward. In sum, housing cap programs are somewhat effective at limiting population growth below the levels of the unconstrained market.

D.2.4.2 Moratoriums on Issuance of Building Permits/Subdivision

Moratorium places temporary limitation on residential growth and its effects depend heavily on its implementation process. Pendall (2000) in the national survey found that temporary building moratoriums do not affect rental housing construction or racial composition. When moratoriums work with zoning changes together, they may bring more dramatic impacts on housing. An examination of the region of California with perhaps the strictest growth controls—the South Coast of Santa Barbara County, in the 1974-1979 period—concluded that a shortfall of housing production resulting from water hookup moratoriums and zoning changes accounted for about one-quarter of the change in real house prices (Mercer and Morgan 1982). However, the impacts on housing price are not separated between moratoriums and zoning changes, so it is questionable regarding the influence moratoriums impose on housing price. Meanwhile, the

study suffers from a case of extreme collinearity (r=0.97) between the variable for housing unit shortfalls and a measure of countywide employment, which may render its conclusions tenuous.

D.2.5 Institutional Control

This group mainly refers to voter approval requirements, super-majority vote requirement in city council, review streamlining, and one-stop permitting. These measures tend to lengthen the approval process, make the process more complex, put further limits on elected officials, and as one of the results, increase the uncertainty in permit approval process. The increase uncertainty and transaction costs associated with these measures function to discourage new housing investment. To a large degree, they succeed in that they reduce new construction activity and thus they are stringent land use controls.

D.2.5.1 Voter Approval Requirements

Under this requirement, voters are empowered to accept or reject specific development proposals submitted by developers or certain growth measures enacted by the city council when these proposals or measures are referred to them by popular petition. In an analysis of construction activity in 63 Ohio cities between 1980 and 1994, Staley (2001) finds consistent and robust evidence that subjecting rezoning decisions to voter approval (in fact public referendums)—an essentially unpredictable growth management approach—reduced new housing construction activity, irrespective of whether particular rezoning requests were approved or rejected. Note that this result focuses on the popular referendum requirement per se, not the broader class of growth management devices. The argument is that referendum requirements introduce a large degree of uncertainty for developers, which hinders investment.

D.2.5.2 Super-Majority Vote Requirement in City Council

Development proposals in most California cities may be approved by a simple majority vote of the city council. In a very few cities, voters have sought to put further limits on their elected officials by requiring that development proposals receive a super-majority or two-thirds city council vote. Such requirements are explicitly intended to slow the rate of growth and development. To a large degree, they succeed. Still in the peer-comparison study, compared individually and collectively, rates of population and housing growth in the three case study cities with voter-enacted supper-majority approval requirements were only 40-50 percent of those of their peers (Landis et al. 2002).

D.2.5.3 Review Streamlining and One-Stop Permitting

As for review streamlining and one-stop permitting, I take California Environmental Quality Act (CEQA) as an example. CEQA review can be one of the most unpredictable elements of the residential development process. Streamlining is a CEQA reform effort focusing on removing from the review process "environmental" impacts that can be regulated effectively through a city's general plan or ordinances, such as parking, noise, public safety, and fiscal effects. Some jurisdictions also have reported success in moving forward a one-stop permitting process, under which CEQA and other reviews are consolidated into a single process, based on conditions and mitigation measures specified in city ordinances or the general plan (Landis et al. 1995). One-stop permitting is intended to make the system more efficient. This procedure usually works best when all relevant permitting is centralized under one permitting agency. However, critics argue that multi-stop system can be more efficient than the one-stop system simply because developers can work directly with each permitting agency to solve problems face-to-face and one-at-a-time (Nelson and Duncan 1995).

These measures will reduce hurdles in permit application process and thus have little effects on limiting growth. Rather, they save time for developers and reduce the uncertainty in development process and thus encourage residential growth.

D.2.6 Other Measures

This group includes measures indirectly related to growth management, such as growth management elements of the General Plan, affordable housing programs, farmland protection ordinances, etc. They are part of a broad effort to manage growth, even though some of them may not directly respond to growth.

Since growth management elements of the General Plan could include a spectrum of specific growth measures, they could, but not necessarily would, contribute to the reduction of construction activity. It is worth mentioning that consistency requirement between general plans and zoning ordinances can greatly enhance the power of local general plan. One appellate court in California even threw a ballot-box zoning initiative off the ballot because it would have resulted in a zoning ordinance inconsistent with the general plan. This requirement can thus give legal weight to the planning process and affect growth to certain extent.

Linkage fees, an important measure of affordable housing program, is a form of development exaction requiring nonresidential development projects to contribute to the funding of affordable housing and other social programs (day-care facilities, job training), the need of which can be linked to the new development. In terms of residential development, this measure imposes extra cost on developers in affordable housing development process, but does not alter the level of uncertainty and thus may have little effects on limiting growth. It is viewed as less stringent among growth management measures.

Farmland protection aims at protecting farmland as a primary economic sector as well as important environmental amenities. They could be seen as a member in the growth management family due to their ability in prohibiting growth from farmland and other openspace. Their effects on growth truly depend on the implementation process. Even in the cases most successfully protecting farmland, they may not intend to limit the amount of growth and the location where development could happen. They occupy a range in the restrictiveness continuum regarding growth management measures.

D.3 Conclusion

In each group of growth management policies, measures exhibit different levels of average restrictive potential. I summarized this difference in Table D-3.

Overall, some types of growth management measures, principally low-density zoning, downzoning, residential caps, annexation limits, voter approval requirements, and super-majority vote requirement in city council, do appear to significantly limit population growth in the cities that adopt them. Annexation limits, voter approval requirements, and super-majority vote requirement in city councils are most restrictive or least accommodating growth measures, because they increase the uncertainty in permit approval process and discourage new housing investment. Residential caps also limit housing construction through limiting the ultimate number of new residents in a city, but slightly less restrictive. Low-density zoning and downzoning are yet less restrictive, but can come close to residential cap measures. Subdivision regulations come somewhere in the middle of the spectrum. Other growth management programs, notably UGBs and USAs, function to redistribute growth from fringe areas toward more central locations, while residential APFOs and impact fees do little if anything to restrict residential growth—In the constrained fiscal climate of Proposition 13 in California, public

facilities regulations are far from growth limiting; rather, they are growth-enabling unless the purpose of growth management measures is to limit population growth and floor space development.

Table D-3. Average Restrictive Potential among Growth Management Measures

Categories	Measures (top line – most restrictive)
Pace of Growth	building permit caps, population growth caps
	moratoria on issuance of building permits/subdivision
Institutional Control	voter approval requirements, super-majority vote requirement in city council
Zoning Ordinances and Subdivision Regulations	low-density zoning, exclusionary zoning, downzoning
	height limits, floor area ratio (FAR) regulations
	high-density zoning, upzoning, inclusionary zoning
Urban Containment	annexation limits
	urban growth boundaries (UGBs)/urban limit lines (ULLs)/green lines/blue lines, urban service areas (USAs)/urban service boundaries (USBs)/greenbelts
Public Facilities Regulations	impact fees
	adequate public facilities ordinances (APFOs)
	review streamlining, one-stop permitting
Other Measures (not assessed)	growth management elements of the general plan, affordable housing programs (such as housing linkage fees, affordable housing density bonuses), farmland protection ordinances (right-to-farm, differential tax assessments, state income tax credits, capital gains taxes, voluntary districts, agricultural/forest buffers, rural land reassembly).

Note: Average restrictive potential of measures decreases from upper row to lower row in each policy category.

Appendix E. Data Collection and Processing for the Quantitative Analyses

Table E-1. List of Variables for the Quantitative Analyses

Variables	Definition	Sources
Dependent Variables		
Restrictiveness	Growth management restrictiveness index (0-6)	2003 policy survey
Permit cap	Presence of building permit cap (1-yes; 0-no)	2003 policy survey
Vote requirement	Presence of voter approval requirement (1-yes; 0-no)	2003 policy survey
Low density zoning	Presence of low-density-only zoning (1-yes; 0-no)	2003 policy survey
Mobile home and/or apartment prohibition	Presence of mobile home/apartment prohibition (1-yes; 0-no)	2003 policy survey
Urban containment	Presence of urban containment (1-yes; 0-no)	2003 policy survey
Facilities regulation	Presence of impact fees and APFOs (1-yes; 0-no)	2003 policy survey
Direct Democracy Variables		
Direct democracy	General access to direct democracy (1-yes; 0-no)	2006 direct democracy survey/2006 APA Chapter survey/2001 ICMA survey
Town meeting	Presence of town meeting form of government (1-yes; 0-no)	Same as above
Initiative	Access to initiative (1-yes; 0-no)	Same as above
Referendum	Access to referendum (1-yes; 0-no)	Same as above
Resident Status Variables[78]		
White	Percent white, over total population, 00 (%)	Census 2000
Income	80 percentile household income, 99, thousand dollar	Census 2000
Growth Variable		
Growth rate	Household population growth rate 90-00 (%)	Census 2000, 1990
Interaction Terms		
White*DD	Interaction of white by direct democracy access	
Income*DD	Interaction of income by direct democracy access	
White*town meeting	Interaction of white by town meeting	
Income*town meeting	Interaction of income by town meeting	
White*initiative	Interaction of white by initiative access	
Income*initiative	Interaction of income by initiative access	
White*referendum	Interaction of white by referendum access	
Income*referendum	Interaction of income by referendum access	
Other Control Variables		
Total population	Logarithm of total household population, 00	Census 2000
Senior	Percent 65 and over, over total pop, 00 (%)	Census 2000
Stability	Percent owners moved-in last 5 years, over owner occupied housing units, 00 (%)	Census 2000
Region	Four census regions: northeast-1, midwest-2, south-3, west-4 (base category)	Census 2000
Jurisdiction type	Incorporated (1) vs. unincorporated (0)	2001 ICMA survey
Central city	Central city in a metropolitan area	Census 2000

[78] As a candidate for status variable, percent educated is also tested. However, no significant relationship has been observed partly due to the high correlation levels between education and other variables.

Data from different sources are utilized to perform the quantitative analyses. See Table E-1 for complete information. In addition to the construction of dependent variables and the direct democracy variables, a large set of Census data are retrieved and processed in order to construct control variables. Here I provide detailed information on this process.

From Census 2000, I downloaded seven sections of Summary File 3 (SF3) data for the 48 continental states. These data are then imported into Microsoft Access through a template provided by the US Census Bureau. In Access, I linked these sections through a primary key, selected only data with summary level 090 (State-County-County Subdivision-Place/Remainder-Census Tract-Urban/Rural-Block Group (parts)), and exported them as DBF files. Unnecessary variables are removed in order to reduce file sizes. These block group data are then aggregated based on different types of municipal boundaries (lets call them municipal data), i.e. county, unincorporated proportion of county, county subdivision, unincorporated proportion of county subdivision, and place. Each type of municipal data for 48 states is merged into a single file. So in the end, I have five large files for the continental US with population and housing variables.

In order to calculate growth rate from 1990 to 2000, I need both 1990 and 2000 population and/or housing data at comparable municipal boundaries. Considering the possible municipal boundary change during 1990s, I manually calculated 1990 population/housing based on 2000 boundaries. I first downloaded Census 1990 data —total population, group quarter population, and total housing units. They are Summary Tape File 3 (STF3) files, with a summary level similar to 090 in 2000 data down to block group level. I also downloaded 1990 block group boundary files and 2000 municipal boundary files from Census website. 1990 block group boundaries are converted into points in ArcView. Union function is performed for 2000 boundaries between county and place and between county subdivision and place in order to get

boundaries for unincorporated proportion of counties and unincorporated proportion of county subdivisions. Then 1990 points overlay (spatial join) with 2000 municipal boundaries. 1990 census data are then joined to these 1990 block group points and aggregated based on 2000 boundary codes into five files— county, unincorporated proportion of county, county subdivision, unincorporated proportion of county subdivision, and place. Variables in these 1990 files are joined to the 2000 corresponding files described in previous paragraph.

In next step, when calculating socioeconomic and growth variables, a weighted approach is applied under the following assumption: within the geographic boundary of an unincorporated municipality, such as a county, where one or more incorporated places are present, citizens from the incorporated part may exert influence on growth policies adopted by the unincorporated municipality. In some states such as California, citizens living in cities have the legal right to vote on county planning issues and therefore influence decisions on land use regulations beyond their jurisdiction, while in other states people in incorporated places are not allowed to participate in decision-making process beyond their jurisdiction. In order to account for the varying influence exercised by residents in incorporated places on planning decisions made for unincorporated municipalities, characteristics of the incorporated sections within unincorporated boundaries are weighted based on the population share of the incorporated over the total of both sections.[79]

More specifically, percentage of total population in incorporated over that in the whole jurisdiction is used as the weight. Only the incorporated portion is weighted. The unincorporated portion is not weighted. The two portions then added to get the weighted whole. Following formula are then used (use white and growth rate as example):

[79] Census block group data (summary level 090) are used to derive the control variables. This data set makes the weighting process possible for cases in which only part of an incorporated place is within the geographic boundary of an unincorporated jurisdiction.

% white_weighted=(weighted white in incorporated area + unweighted white in unincorporated area)/unweighted total population in the whole jurisdiction;

weighted growth rate=(weighted household population growth in incorporated + unweighted household population growth in unincorporated)/unweighted 90 household population in the whole jurisdiction, where weighted household population growth in incorporated = (household population 00 in incorporated – household population 90 in incorporated) * weight

In addition to weighted median household income (50%ile), weighted 20%ile and 80%ile income are also calculated in order to capture more precise effects of income on growth policies. The calculation processes are slightly different since Census data provide only total counts for each income bracket. Lets take 80%ile income for example and name the person who is associated with that income John. First based on above weighting rule, I weighted the total counts for each bracket for incorporated areas. Second, by adding the weighted counts to unweighted counts in unincorporated areas, I have the weighted total counts for each income bracket for a whole jurisdiction such as a county. Then I find out the bracket in which John is located (count the number of persons from the lowest income bracket until the number reaches 80% of the total). By assuming an even distribution of individuals' income within John's bracket, I calculate John's income, which is the 80%ile income. Similar procedures also apply to calculating 20%ile and 50%ile incomes.

Appendix F. Statistical Outputs for Chapter 5

F.1 Mean Comparison of Growth Management Restrictiveness between Communities with and without Direct Democracy (Independent-Samples T Test)

Group Statistics

	Direct Democracy	N	Mean	Std. Deviation	Std. Error Mean
Restrictiveness	no	437	2.15	1.029	.049
	yes	459	2.00	1.114	.052

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Restrictiveness	Equal variances assumed	.728	.394	2.044	894	.041	.147	.072	.006	.287
	Equal variances not assumed			2.048	893.227	.041	.147	.072	.006	.287

F.2 For Models of Growth Management Restrictiveness vs. General Access of Direct Democracy and Individual Growth Management Measures vs. General Access of Direct Democracy

Table F-1. Descriptive Statistics for General Direct Democracy Models

Variables	N	Min.	Max.	Mean	St. Dev.
Restrictiveness	938	0	5	2.10	1.08
Direct democracy	1734	0	1	.51	.50
White	1791	1.13	100.00	79.63	16.76
Income (80%tile, thousand)	1791	45.19	702.51	104.70	64.95
Growth rate	1791	-.81	13.82	.24	.60
Total population (ln)	1791	4.17	16.03	10.05	1.41
Senior	1791	2.55	86.96	11.58	5.32
Stability (moved-in 95-00)	1791	.00	80.84	34.31	10.14
Region	1845	1	4	2.22	1.05
Incorporated	1845	0	1	.69	.46
Central city	1766	0	1	.09	.29

Table F-2. Pearson Correlation (2-tailed) for General Direct Democracy Models

	Direct democracy	White	Income	Growth rate	Total population	Senior	Stability	Region	Jurisdiction type	Central city
Direct democracy	1	-.064**	.015	-.017	.048*	-.002	.045	.263**	.028	.042
White	-.064**	1	.138**	.127**	-.435**	.204**	.119**	-.290**	.047*	-.226**
Income	.015	.138**	1	-.022	-.095**	-.021	.001	-.091**	.037	-.119**
Growth rate	-.017	.127**	-.022	1	.009	-.175**	.558**	.226**	.132**	-.045
Total population	.048*	-.435**	-.095**	.009	1	-.124**	.185**	.422**	-.047*	.386**
Senior	-.002	.204**	-.021	-.175**	-.124**	1	-.295**	-.102**	.180**	.001
Stability	.045	.119**	.001	.558**	.185**	-.295**	1	.439**	.199**	.020
Region	.263**	-.290**	-.091**	.226**	.422**	-.102**	.439**	1	.188**	.145**
Jurisdiction type	.028	.047*	.037	.132**	-.047*	.180**	.199**	.188**	1	.145**
Central city	.042	-.226**	-.119**	-.045	.386**	.001	.020	.145**	.145**	1

F.3 Mean Comparison of Growth Management Restrictiveness between Town Meeting Communities and Council Communities (Independent-Samples T Test)

Group Statistics

	Town Meeting	N	Mean	Std. Deviation	Std. Error Mean
Restrictiveness	no	59	2.05	1.024	.133
	yes	39	3.28	.887	.142

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Restrictiveness	Equal variances assumed	.356	.552	-6.136	96	.000	-1.231	.201	-1.629	-.833
	Equal variances not assumed			-6.320	89.138	.000	-1.231	.195	-1.618	-.844

F.4 For Models of Growth Management Restrictiveness vs. Town Meeting and Individual Growth Management Measures vs. Town Meeting

Table F-3. Descriptive Statistics for Town Meeting Models

Variables	N	Min.	Max.	Mean	St. Dev.
Restrictiveness	121	0	5	2.59	1.12
Town meeting	129	0	1	.37	.49
White	182	27.42	99.18	83.89	12.93
Income (80%tile, thousand)	182	52.16	597.34	131.86	93.61
Growth rate	182	-.29	1.12	.02	.17
Total population (ln)	182	7.61	13.22	9.72	.91
Senior	182	3.64	23.42	11.21	3.79
Stability (moved-in 95-00)	182	17.89	62.77	29.35	5.91
Central city	108	0	1	.13	.34

Table F-4. Pearson Correlation (2-tailed) for Town Meeting Models

	Town meeting	White	Income	Growth rate	Total population	Senior	Stability	Central city
Town meeting	1	.212*	.061	.202*	-.363**	-.298**	.154	-.246*
White	.212*	1	.135	.569**	-.253**	.154*	.301**	-.192*
Income	.061	.135	1	.042	-.112	.018	.047	-.205*
Growth rate	.202*	.569**	.042	1	-.026	-.027	.725**	.126
Total population	-.363**	-.253**	-.112	-.026	1	.432**	.047	.592**
Senior	-.298**	.154*	.018	-.027	.432**	1	-.174*	.166
Stability	.154	.301**	.047	.725**	.047	-.174*	1	.218*
Central city	-.246*	-.192*	-.205*	.126	.592**	.166	.218*	1

F.5 Mean Comparison of Growth Management Restrictiveness between Communities with and without Initiative/Referendum (Independent-Samples T Test)

Group Statistics

	Initiative/ Referendum	N	Mean	Std. Deviation	Std. Error Mean
Restrictiveness	no	378	2.17	1.031	.053
	yes	420	1.89	1.057	.052

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Restrictiveness	Equal variances assumed	.130	.719	3.793	796	.000	.281	.074	.136	.426
	Equal variances not assumed			3.798	790.946	.000	.281	.074	.136	.426

F.6 For Models of Growth Management Restrictiveness vs. Initiative and Referendum and Individual Growth Management Measures vs. Initiative and Referendum

Table F-5. Descriptive Statistics for Initiative and Referendum Models

Variables	N	Min.	Max.	Mean	St. Dev.
Restrictiveness	817	0	5	2.02	1.05
Initiative	1591	0	1	.28	.45
Referendum	1603	0	1	.49	.50
White	1609	1.13	100.00	79.15	17.07
Income (80%tile, thousand)	1609	45.19	702.51	101.63	60.13
Growth rate	1609	-.81	13.82	.26	.63
Total population (ln)	1609	4.17	16.03	10.09	1.45
Senior	1609	2.55	86.96	11.62	5.47
Stability (moved-in 95-00)	1609	.00	80.84	34.87	10.37
Region	1661	1	4	2.36	1.02
Jurisdiction type	1661	0	1	.66	.47
Central city	1658	0	1	.09	.29

Table F-6. Pearson Correlation (2-tailed) for Initiative and Referendum Models

	Initiative	Referendum	White	Income	Growth rate	Total population	Senior	Stability	Region	Jurisdiction type	Central city
Initiative	1	.601**	-.139**	.017	.030	.179**	.014	.103**	.511**	.169**	.069**
Referendum	.601**	1	-.082**	.019	-.025	.061*	.012	.043	.264**	.047	.052*
White	-.139**	-.082**	1	.131**	.131**	-.441**	.209**	.128**	-.289**	.030	-.231**
Income	.017	.019	.131**	1	-.007	-.086**	-.022	.023	-.044	.006	-.115**
Growth rate	.030	-.025	.131**	-.007	1	.000	-.185**	.550**	.194**	.166**	-.046
Total population	.179**	.061*	-.441**	-.086**	.000	1	-.154**	.180**	.437**	-.030	.381**
Senior	.014	.012	.209**	-.022	-.185**	-.154**	1	-.309**	-.123**	.195**	-.007
Stability	.103**	.043	.128**	.023	.550**	.180**	-.309**	1	.415**	.250**	.018
Region	.511**	.264**	-.289**	-.044	.194**	.437**	-.123**	.415**	1	.303**	.170**
Jurisdiction type	.169**	.047	.030	.006	.166**	-.030	.195**	.250**	.303**	1	.148**
Central city	.069**	.052*	-.231**	-.115**	-.046	.381**	-.007	.018	.170**	.148**	1

F.7 Revised Growth Management Characteristics Models

F.7.1 Growth Management vs. Direct Democracy

Table F-7. Logistic Regression Results – National Models without New England States and California (GM vs. DD)

	Permit Cap		Vote Requirement		Low Density Zoning		Mobile/Apt. Prohibition		Urban Containment		Facilities Regulations	
	B	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**
Direct Democracy	1.278**	3.588	-.059	.943	-.101	.904	.079	1.082	-.120	.887	-1.092***	.335
White	.006	1.006	-.001	.999	.012**	1.012	-.021***	.980	.010*	1.010	.005	1.005
Household Income	-.002	.998	.001	1.001	.002*	1.002	.023***	1.023	-.003	.997	.001	1.001
Growth Rate (90-00)	-1.875**	.153	-.038	.963	-.139	.870	-.084	.919	.125	1.133	.087	1.090
Total Pop. (log)	.179	1.196	-.293***	.746	-.536***	.585	-.410***	.664	.501***	1.650	.329***	1.389
Senior	-.127	.881	.024*	1.024	-.031*	.969	.009	1.009	-.071***	.932	-.040**	.961
Moved-in btwn 95-00	.090**	1.094	-.008	.992	-.031***	.969	-.037***	.963	.012	1.012	.010	1.010
Incorporated	-.577	.561	-.097	.908	-.995***	.370	.952***	2.592	.312*	1.366	.944***	2.570
Central City	-.414	.661	-.396	.673	-.599	.549	-.099	.906	-.347	.707	-.837***	.433
Constant	-6.901**	.001	2.646***	14.098	5.167***	175.442	4.335***	76.304	-6.506***	.001	-2.951***	.052
N	542		1188		1248		1299		1068		928	
Pseudo R^2 (Nagelkerke):	0.156		0.077		0.255		0.225		0.157		0.201	

*p<0.10; **p<0.05; ***p<0.01

Table F-8. Logistic Regression Results – Northeast Models without New England States (GM vs. DD)

	Permit Cap		Vote Requirement		Low Density Zoning		Mobile/Apt. Prohibition		Urban Containment		Facilities Regulations	
	B	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**
Direct Democracy	-15.653	.000	-.108	.897	.348	1.416	1.316***	3.729	-.774	.461	-.347	.706
White	-.046	.955	.004	1.004	.020*	1.020	-.002	.998	.001	1.001	-.015	.986
Household Income	-.011	.989	.001	1.001	-.001	.999	.011***	1.011	-.002	.998	-.002	.998
Growth Rate (90-00)	-3.368	.034	.437	1.548	-1.180	.307	.129	1.138	-1.784	.168	-.374	.688
Total Pop. (log)	.013	1.013	-.110	.896	-.766***	.465	-.027	.974	.603***	1.828	.094	1.099
Senior	.118	1.125	-.019	.982	-.068**	.934	-.033	.968	-.049	.953	-.081*	.922
Moved-in btwn 95-00	.120	1.128	-.004	.996	-.023	.978	-.024	.976	.036	1.037	.009	1.009
Incorporated	-13.370	.000	.182	1.200	-.776**	.460	1.281***	3.601	.784	2.191	-.637	.529
Central City	9.220	1.0E4	-1.266	.282	-18.810	.000	-.359	.699	1.147	3.149	.001	1.001
Constant	-3.666	.026	1.161	3.193	7.176***	1.3E3	.359	1.431	-8.538**	.000	3.073	21.603
N	206		294		317		317		254		164	
Pseudo R^2 (Nagelkerke):	0.122		0.037		0.281		0.206		0.139		0.136	

*p<0.10; **p<0.05; ***p<0.01

Table F-9 Logistic Regression Results – Midwest Models (GM vs. DD)

	Permit Cap		Vote Requirement		Low Density Zoning		Mobile/Apt. Prohibition		Urban Containment		Facilities Regulations	
	B	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**
Direct Democracy	6.312**	551.360	.089	1.093	-.176	.838	-.437**	.646	-.578**	.561	-.896***	.408
White	.250	1.284	-.003	.997	.007	1.007	-.024***	.976	.024*	1.024	.019**	1.019
Household Income	.025**	1.025	-.001	.999	.005**	1.005	.030***	1.030	.000	1.000	.000	1.000
Growth Rate (90-00)	-.758	.469	-.014	.986	-.037	.964	-.197	.821	-.517	.596	.203	1.225
Total Pop. (log)	2.339**	10.367	-.313	.731***	-.497***	.608	-.685***	.504	.309***	1.362	.364***	1.440
Senior	-1.269**	.281	.043	1.044*	.006	1.006	.021	1.021	-.140***	.869	-.118***	.889
Moved-in btwn 95-00	-.200	.819	-.001	.999	-.018	.983	-.039***	.961	-.018	.982	.022	1.023
Incorporated	-5.751	.003	-.069	.933	-1.015***	.363	1.206***	3.342	.255	1.290	2.060***	7.850
Central City	-17.008	.000	-.683	.505	.256	1.291	.541	1.718	.172	1.188	-.803*	.448
Constant	-33.339*	.000	2.614	13.652**	4.030***	56.267	6.942***	1034.591	-4.120**	.016	-5.114***	.006
N	231		512		595		575		425		456	
Pseudo R^2 (Nagelkerke):	0.486		0.075		0.177		0.287		0.119		0.371	

*p<0.10; **p<0.05; ***p<0.01

Table F-10 Logistic Regression Results – South Models (GM vs. DD)

	Permit Cap[1]		Vote Requirement		Low Density Zoning		Mobile/Apt. Prohibition		Urban Containment		Facilities Regulations	
	B	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**
Direct Democracy	.267	1.306	-.091	.913	-.021	.979	-.069	.933	-.047	.955	-.824**	.439
White	-.047	.954	-.008	.992	.016	1.016	-.034***	.966	.036***	1.037	.007	1.007
Household Income	.092*	1.096	.004	1.004	-.001	.999	.022***	1.022	-.003	.997	-.004	.996
Growth Rate (90-00)	-15.568*	.000	-.492	.612	-.516	.597	-.312	.732	.643**	1.903	-.119	.888
Total Pop. (log)	-.878	.416	-.257	.773	-.517**	.596	-.344**	.709	.240	1.271	.407**	1.502
Senior	.023	1.024	.023	1.024	-.104*	.902	.019	1.019	-.053	.949	-.002	.998
Moved-in btwn 95-00	.290	1.337	.019	1.019	-.005	.995	.023	1.024	-.044**	.957	.008	1.008
Incorporated			.097	1.102	-1.474***	.229	.627*	1.873	-.946**	.388	1.609***	4.997
Central City	2.320	10.171	-.656	.519	-18.533	.000	-.237	.789	-.252	.778	-1.259**	.284
Constant	-6.243	.002	1.496	4.466	5.073*	159.611	2.455	11.646	-2.946	.053	-4.497*	.011
N	48		271		270		281		265		229	
Pseudo R^2 (Nagelkerke):	0.444		0.071		0.222		0.161		0.153		0.209	

*p<0.10; **p<0.05; ***p<0.01

[1] Variable "Incorporated" is removed from the test due to highly multicolinearity problem.

Table F-11. Logistic Regression Results – West Models without California (GM vs. DD)

	Permit Cap		Vote Requirement		Low Density Zoning		Mobile/Apt. Prohibition		Urban Containment		Facilities Regulations	
	B	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**
Direct Democracy	18.984	1.76E8	-.579	.560	-1.957	.141	1.027*	2.794	-1.644**	.193	-11.630*	.000
White	.062	1.064	.013	1.013	.417	1.518	-.067**	.935	-.042	.959	-.344*	.709
Household Income	-.007	.993	.001	1.001	-.144	.866	.030**	1.031	.025	1.025	.043	1.044
Growth Rate (90-00)	-2.744	.064	.522	1.685	2.652	14.179	.591*	1.806	-.058	.944	-.698	.498
Total Pop. (log)	.004*	1.004	-.246	.782	.182	1.200	.114	1.121	-.234	.791	9.212*	1.0E4
Senior	-.036	.965	.024	1.024	.296	1.345	.004*	1.004	-.021	.979	.223	1.250
Moved-in btwn 95-00	.126	1.134	-.016	.984	-.485	.616	-.053	.949	.016	1.016	.252	1.286
Incorporated	.339	1.403	.177	1.193	-9.881	.000	.561	1.753	-1.208	.299	19.522*	3.0E8
Central City	-.725	.484	.923	2.516	-15.142	.000	-.830	.436	.408	1.504	-11.603*	.000
Constant	-29.022	.000	1.081	2.948	-7.634	.000	.863	2.370	6.700	812.203	-87.270	.000
N	57		111		66		126		124		79	
Pseudo R^2 (Nagelkerke):	0.241		0.117		0.531		0.187		0.242		0.704	

*p<0.10; **p<0.05; ***p<0.01

F.7.2 Growth Management vs. Initiative and Referendum

Table F-12. Logistic Regression Results – National Models without New England States and California (GM vs. Ini/Ref)

	Permit Cap		Vote Requirement		Low Density Zoning		Mobile/Apt. Prohibition		Urban Containment		Facilities Regulations	
	B	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**
Initiative	-.171	.843	.125	1.133	-.190	.827	.298	1.347	-.031	.969	.375*	1.455
Referendum	1.215**	3.370	-.077	.926	-.026	.975	.005	1.005	-.063	.939	-1.259***	.284
White	.006	1.006	-.002	.998	.012**	1.012	-.022***	.979	.011*	1.011	.003	1.003
Household Income	-.002	.998	.001	1.001	.002	1.002	.023***	1.024	-.003	.997	.001	1.001
Growth Rate (90-00)	-1.944**	.143	-.024	.976	-.122	.885	-.091	.913	.120	1.127	.066	1.068
Total Pop. (log)	.198	1.219	-.303***	.738	-.526***	.591	-.419***	.657	.515***	1.674	.333***	1.395
Senior	-.122*	.885	.023*	1.023	-.032*	.969	.009	1.010	-.071***	.931	-.038**	.963
Moved-in btwn 95-00	.095**	1.100	-.009	.991	-.032***	.969	-.038***	.963	.012	1.012	.014	1.014
Incorporated	-.534	.586	-.121	.886	-.996***	.369	.927***	2.527	.339*	1.404	.842***	2.320
Central City	-.435	.647	-.390	.677	-.580	.560	-.060	.941	-.384	.681	-.832***	.435
Constant	-7.198**	.001	2.903***	18.222	5.068***	158.842	4.520***	91.854	-6.742***	.001	-2.913***	.054
N	541		1161		1230		1271		1041		900	
Pseudo R^2 (Nagelkerke):	0.151		0.080		0.255		0.227		0.159		0.206	

*p<0.10; **p<0.05; ***p<0.01

Table F-13 Logistic Regression Results – Northeast Models without New England States (GM vs. Ini/Ref)

	Permit Cap		Vote Requirement		Low Density Zoning		Mobile/Apt. Prohibition		Urban Containment		Facilities Regulations	
	B	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**
Initiative	-15.873	.000	-.424	.655	-.207	.813	-1.674**	.188	-.965	.381	20.250	6.23E8
Referendum	-12.824	.000	.001	1.001	.429	1.536	1.831***	6.240	-.576	.562	-.603	.547
White	-.048	.953	.005	1.005	.020*	1.021	.000	1.000	.002	1.002	-.017	.984
Household Income	-.011	.989	.001	1.001	-.001	.999	.010**	1.010	-.002	.998	-.002	.998
Growth Rate (90-00)	-3.374	.034	.443	1.557	-1.198	.302	.030	1.031	-1.861	.155	-.254	.776
Total Pop. (log)	-.001	.999	-.111	.895	-.767***	.464	.003	1.003	.619***	1.858	.080	1.083
Senior	.122	1.129	-.018	.982	-.069**	.933	-.037	.964	-.048	.953	-.078	.925
Moved-in btwn 95-00	.126	1.134	-.006	.994	-.025	.975	-.032	.968	.033	1.034	.014	1.015
Incorporated	-13.349	.000	.172	1.188	-.793**	.453	1.282***	3.603	.764	2.148	-.650	.522
Central City	6.317	553.685	-1.265	.282	-18.830	.000	-.472	.624	1.132	3.103	.157	1.170
Constant	-3.588	.028	1.185	3.271	7.203***	1343.660	.252	1.286	-8.716***	.000	3.135	22.982
N	206		294		317		317		254		164	
Pseudo R^2 (Nagelkerke):	0.116		0.039		0.282		0.240		0.138		0.169	

*p<0.10; **p<0.05; ***p<0.01

Table F-14. Logistic Regression Results – Midwest Models (GM vs. Ini/Ref)

	Permit Cap		Vote Requirement		Low Density Zoning		Mobile/Apt. Prohibition		Urban Containment		Facilities Regulations	
	B	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**
Initiative	-2.530	.080	.321	1.378	-.099	.905	1.385***	3.995	-1.179***	.307	.606**	1.833
Referendum	8.811**	6709.714	-.023	.977	-.175	.840	-.992***	.371	-.146	.864	-1.197***	.302
White	.219	1.245	-.002	.998	.008	1.008	-.022**	.978	.021	1.021	.020**	1.020
Household Income	.030**	1.031	-.001	.999	.005**	1.005	.031***	1.032	.000	1.000	.000	1.000
Growth Rate (90-00)	.050	1.051	.001	1.001	-.023	.978	-.305	.737	-.333	.717	.115	1.122
Total Pop. (log)	3.026**	20.618	-.316***	.729	-.495***	.610	-.735***	.480	.362***	1.437	.354***	1.425
Senior	-1.482**	.227	.039	1.040	.005	1.005	.009	1.009	-.137***	.872	-.121***	.886
Moved-in btwn 95-00	-.219	.803	-.002	.998	-.018	.982	-.039***	.962	-.025	.975	.026	1.027
Incorporated	-5.341	.005	-.081	.922	-1.030***	.357	1.205***	3.337	.290	1.337	2.087***	8.064
Central City	-17.916	.000	-.656	.519	.268	1.307	.670	1.954	.083	1.087	-.763	.466
Constant	-37.298**	.000	2.616**	13.681	3.993***	54.219	7.245***	1401.277	-4.205**	.015	-5.210***	.005
N	230		510		593		573		424		455	
Pseudo R^2 (Nagelkerke):	0.524		0.079		0.179		0.334		0.153		0.384	

*p<0.10; **p<0.05; ***p<0.01

Table F-15. Logistic Regression Results – South Models (GM vs. Ini/Ref)

	Permit Cap[1]		Vote Requirement		Low Density Zoning		Mobile/Apt. Prohibition		Urban Containment		Facilities Regulations	
	B	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**
Initiative	-18.539	.000	.644	1.904	.266	1.304	.719	2.052	-1.226	.293	.070	1.072
Referendum	.440	1.552	.023	1.023	.346	1.413	-.009	.991	.257	1.293	-.695*	.499
White	-.040	.961	-.012	.988	.015	1.015	-.034***	.967	.039***	1.040	.007	1.007
Household Income	.080	1.083	.004	1.004	.000	1.000	.019***	1.019	-.003	.997	-.004	.996
Growth Rate (90-00)	-15.643*	.000	-.518*	.596	-.564	.569	-.279	.757	.561**	1.753	-.185	.831
Total Pop. (log)	-.774	.461	-.334*	.716	-.540**	.583	-.355**	.701	.195	1.215	.333	1.395
Senior	.021	1.021	.025	1.025	-.104*	.901	.019	1.019	-.053	.948	.002	1.002
Moved-in btwn 95-00	.308	1.360	.019	1.019	.002	1.002	.026	1.026	-.046**	.955	.020	1.020
Incorporated			-.127	.880	-1.609***	.200	.569	1.766	-1.039**	.354	1.107**	3.024
Central City	1.873	6.507	-.711	.491	-18.491	.000	-.246	.782	-.264	.768	-1.101*	.332
Constant	-7.272	.001	2.684	14.640	5.203*	181.733	2.637	13.973	-2.534	.079	-3.764	.023
N	48		247		254		256		240		202	
Pseudo R^2 (Nagelkerke):	0.451		0.089		0.228		0.163		0.181		0.124	

*p<0.10; **p<0.05; ***p<0.01

[1] Variable "Incorporated" is removed from the test due to highly multicolinearity problem.

Table F-16. Logistic Regression Results – West Models without California (GM vs. Ini/Ref)

	Permit Cap		Vote Requirement		Low Density Zoning		Mobile/Apt. Prohibition		Urban Containment		Facilities Regulations	
	B	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**	**B**	**e^B**
Initiative	-1.170	.310	.756	2.129	24.258	3.42E10	2.182*	8.862	.397	1.487	-236.171	.000
Referendum	.298	1.347	-1.503	.222	-25.817	.000	-1.036	.355	-1.421	.242	-298.483	.000
White	.056	1.058	.004	1.004	.523	1.687	-.066**	.936	-.043	.958	-34.036	.000
Household Income	-.009	.991	.002	1.002	-.061	.940	.033**	1.034	.027	1.028	4.098	60.227
Growth Rate (90-00)	-2.705*	.067	.567	1.763	4.258	70.641	.603*	1.827	-.037	.963	256.155	1.764E111
Total Pop. (log)	.031	1.032	-.406	.666	.140	1.150	.095	1.100	-.250	.779	458.276	1.064E199
Senior	-.110	.896	.036	1.036	.743	2.101	.016	1.016	-.017	.983	27.045	5.568E11
Moved-in btwn 95-00	.107	1.113	-.016	.984	-.657	.518	-.056*	.945	.012	1.012	13.012	4.478E5
Incorporated	1.348	3.852	.292	1.339	-13.675	.000	.480	1.615	-1.623	.197	1098.208	6.754E218
Central City	-.929	.395	1.110	3.035	-13.460	.000	-.951	.386	.395	1.484	-565.501	.000
Constant	-8.170	.000	3.213	24.863	-20.294	.000	.737	2.090	6.741	846.195	-3581.993	.000
N	57		110		66		125		123		79	
Pseudo R^2 (Nagelkerke):	0.230		0.173		0.563		0.210		0.215		1.000	

*p<0.10; **p<0.05; ***p<0.01

F.8 Classification Tables for Logistic Models

F.8-1 Classification tables for the national models

Classification Table[a]

Observed			Predicted		
			pop/building cap		
			no	yes	Percentage Correct
Step 1	pop/building cap	no	719	0	100.0
		yes	54	0	.0
	Overall Percentage				93.0

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of voter requirements		
			no	yes	Percentage Correct
Step 1	presence of voter requirements	no	632	174	78.4
		yes	357	253	41.5
	Overall Percentage				62.5

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Low density zoning		
			no zoning or >=8	<8	Percentage Correct
Step 1	Low density zoning	no zoning or >=8	833	93	90.0
		<8	222	180	44.8
	Overall Percentage				76.3

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Mobile Homes/Apartments prohibited (exclusionary zoning)		
			not prohibited	if one or both are prohibited	Percentage Correct
Step 1	Mobile Homes/Apartments prohibited (exclusionary zoning)	not prohibited	498	254	66.2
		if one or both are prohibited	190	606	76.1
	Overall Percentage				71.3

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of urban containment		
			no	yes	Percentage Correct
Step 1	presence of urban containment	no	925	60	93.9
		yes	236	107	31.2
	Overall Percentage				77.7

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of facilities regulations		
			no	yes	Percentage Correct
Step 1	presence of facilities regulations	no	156	238	39.6
		yes	97	597	86.0
	Overall Percentage				69.2

a. The cut value is .500

F.8-2 Classification tables for the New England models

Classification Table[a]

Observed			Predicted		
			pop/building cap		Percentage Correct
			no	yes	
Step 1	pop/building cap	no	32	3	91.4
		yes	4	5	55.6
	Overall Percentage				84.1

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of voter requirements		Percentage Correct
			no	yes	
Step 1	presence of voter requirements	no	34	0	100.0
		yes	9	31	77.5
	Overall Percentage				87.8

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Low density zoning		Percentage Correct
			no zoning or >=8	<8	
Step 1	Low density zoning	no zoning or >=8	30	6	83.3
		<8	5	39	88.6
	Overall Percentage				86.3

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Mobile Homes/Apartments prohibited (exclusionary zoning)		
			not prohibited	if one or both are prohibited	Percentage Correct
Step 1	Mobile Homes/Apartments prohibited (exclusionary zoning)	not prohibited	0	12	.0
		if one or both are prohibited	1	67	98.5
	Overall Percentage				83.8

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of urban containment		
			no	yes	Percentage Correct
Step 1	presence of urban containment	no	72	0	100.0
		yes	5	1	16.7
	Overall Percentage				93.6

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of facilities regulations		
			no	yes	Percentage Correct
Step 1	presence of facilities regulations	no	52	2	96.3
		yes	14	9	39.1
	Overall Percentage				79.2

a. The cut value is .500

F.8-3 Classification tables for the Non-New England models

Classification Table[a]

Observed			Predicted		
			pop/building cap		Percentage Correct
			no	yes	
Step 1	pop/building cap	no	683	0	100.0
		yes	45	0	.0
	Overall Percentage				93.8

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of voter requirements		Percentage Correct
			no	yes	
Step 1	presence of voter requirements	no	602	150	80.1
		yes	350	213	37.8
	Overall Percentage				62.0

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Low density zoning		Percentage Correct
			no zoning or >=8	<8	
Step 1	Low density zoning	no zoning or >=8	798	78	91.1
		<8	212	142	40.1
	Overall Percentage				76.4

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Mobile Homes/Apartments prohibited (exclusionary zoning)		
			not prohibited	if one or both are prohibited	Percentage Correct
Step 1	Mobile Homes/Apartments prohibited (exclusionary zoning)	not prohibited	478	245	66.1
		if one or both are prohibited	184	533	74.3
	Overall Percentage				70.2

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of urban containment		
			no	yes	Percentage Correct
Step 1	presence of urban containment	no	846	49	94.5
		yes	232	96	29.3
	Overall Percentage				77.0

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of facilities regulations		
			no	yes	Percentage Correct
Step 1	presence of facilities regulations	no	143	179	44.4
		yes	71	590	89.3
	Overall Percentage				74.6

a. The cut value is .500

F.8-4 Classification tables for the national models without cases from New England states and California (GM vs. DD)

Classification Table[a]

Observed		Predicted		
		pop/building cap		
		no	yes	Percentage Correct
Step 1	pop/building cap no	517	0	100.0
	yes	25	0	.0
	Overall Percentage			95.4

a. The cut value is .500

Classification Table[a]

Observed		Predicted		
		presence of voter requirements		
		no	yes	Percentage Correct
Step 1	presence of voter requirements no	554	128	81.2
	yes	315	191	37.7
	Overall Percentage			62.7

a. The cut value is .500

Classification Table[a]

Observed		Predicted		
		Low density zoning		
		no zoning or >=8	<8	Percentage Correct
Step 1	Low density zoning no zoning or >=8	817	73	91.8
	<8	221	137	38.3
	Overall Percentage			76.4

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Mobile Homes/Apartments prohibited (exclusionary zoning)		
			not prohibited	if one or both are prohibited	Percentage Correct
Step 1	Mobile Homes/Apartments prohibited (exclusionary zoning)	not prohibited	394	215	64.7
		if one or both are prohibited	201	489	70.9
	Overall Percentage				68.0

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of urban containment		
			no	yes	Percentage Correct
Step 1	presence of urban containment	no	750	43	94.6
		yes	234	41	14.9
	Overall Percentage				74.1

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of facilities regulations		
			no	yes	Percentage Correct
Step 1	presence of facilities regulations	no	115	188	38.0
		yes	68	557	89.1
	Overall Percentage				72.4

a. The cut value is .500

F.8-5 Classification tables for the Northeast models without cases from New England states (GM vs. DD)

Classification Table[a]

Observed		Predicted		
		pop/building cap		
		no	yes	Percentage Correct
Step 1	pop/building cap no	203	0	100.0
	yes	3	0	.0
	Overall Percentage			98.5

a. The cut value is .500

Classification Table[a]

Observed		Predicted		
		presence of voter requirements		
		no	yes	Percentage Correct
Step 1	presence of voter requirements no	19	110	14.7
	yes	19	146	88.5
	Overall Percentage			56.1

a. The cut value is .500

Classification Table[a]

Observed		Predicted		
		Low density zoning		
		no zoning or >=8	<8	Percentage Correct
Step 1	Low density zoning no zoning or >=8	131	43	75.3
	<8	50	93	65.0
	Overall Percentage			70.7

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Mobile Homes/Apartments prohibited (exclusionary zoning)		
			not prohibited	if one or both are prohibited	Percentage Correct
Step 1	Mobile Homes/Apartments prohibited (exclusionary zoning)	not prohibited	42	60	41.2
		if one or both are prohibited	25	190	88.4
	Overall Percentage				73.2

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of urban containment		
			no	yes	Percentage Correct
Step 1	presence of urban containment	no	232	0	100.0
		yes	20	2	9.1
	Overall Percentage				92.1

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of facilities regulations		
			no	yes	Percentage Correct
Step 1	presence of facilities regulations	no	3	31	8.8
		yes	2	128	98.5
	Overall Percentage				79.9

a. The cut value is .500

F.8-6 Classification tables for the Midwest models (GM vs. DD)

Classification Table[a]

Observed			Predicted		
			pop/building cap		Percentage Correct
			no	yes	
Step 1	pop/building cap	no	224	1	99.6
		yes	6	0	.0
	Overall Percentage				97.0

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of voter requirements		Percentage Correct
			no	yes	
Step 1	presence of voter requirements	no	245	50	83.1
		yes	139	78	35.9
	Overall Percentage				63.1

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Low density zoning		Percentage Correct
			no zoning or >=8	<8	
Step 1	Low density zoning	no zoning or >=8	398	27	93.6
		<8	121	49	28.8
	Overall Percentage				75.1

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Mobile Homes/Apartments prohibited (exclusionary zoning)		
			not prohibited	if one or both are prohibited	Percentage Correct
Step 1	Mobile Homes/Apartments prohibited (exclusionary zoning)	not prohibited	134	104	56.3
		if one or both are prohibited	69	268	79.5
	Overall Percentage				69.9

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of urban containment		
			no	yes	Percentage Correct
Step 1	presence of urban containment	no	346	1	99.7
		yes	73	5	6.4
	Overall Percentage				82.6

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of facilities regulations		
			no	yes	Percentage Correct
Step 1	presence of facilities regulations	no	134	62	68.4
		yes	51	209	80.4
	Overall Percentage				75.2

a. The cut value is .500

F.8-7 Classification tables for the South models (GM vs. DD)

Classification Table[a]

Observed			Predicted		
			pop/building cap		Percentage Correct
			no	yes	
Step 1	pop/building cap	no	42	1	97.7
		yes	3	2	40.0
	Overall Percentage				91.7

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of voter requirements		Percentage Correct
			no	yes	
Step 1	presence of voter requirements	no	178	6	96.7
		yes	81	6	6.9
	Overall Percentage				67.9

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Low density zoning		Percentage Correct
			no zoning or >=8	<8	
Step 1	Low density zoning	no zoning or >=8	228	1	99.6
		<8	40	1	2.4
	Overall Percentage				84.8

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Mobile Homes/Apartments prohibited (exclusionary zoning)		
			not prohibited	if one or both are prohibited	Percentage Correct
Step 1	Mobile Homes/Apartments prohibited (exclusionary zoning)	not prohibited	147	21	87.5
		if one or both are prohibited	69	44	38.9
	Overall Percentage				68.0

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of urban containment		
			no	yes	Percentage Correct
Step 1	presence of urban containment	no	164	16	91.1
		yes	58	27	31.8
	Overall Percentage				72.1

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of facilities regulations		
			no	yes	Percentage Correct
Step 1	presence of facilities regulations	no	22	45	32.8
		yes	16	146	90.1
	Overall Percentage				73.4

a. The cut value is .500

F.8-8 Classification tables for the West models without cases from California (GM vs. DD)

Classification Table[a]

Observed			Predicted		
			pop/building cap		Percentage Correct
			no	yes	
Step 1	pop/building cap	no	44	2	95.7
		yes	10	1	9.1
	Overall Percentage				78.9

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of voter requirements		Percentage Correct
			no	yes	
Step 1	presence of voter requirements	no	72	2	97.3
		yes	29	8	21.6
	Overall Percentage				72.1

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Low density zoning		Percentage Correct
			no zoning or >=8	<8	
Step 1	Low density zoning	no zoning or >=8	62	0	100.0
		<8	3	1	25.0
	Overall Percentage				95.5

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Mobile Homes/Apartments prohibited (exclusionary zoning)		
			not prohibited	if one or both are prohibited	Percentage Correct
Step 1	Mobile Homes/Apartments prohibited (exclusionary zoning)	not prohibited	99	2	98.0
		if one or both are prohibited	22	3	12.0
	Overall Percentage				81.0

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of urban containment		
			no	yes	Percentage Correct
Step 1	presence of urban containment	no	10	24	29.4
		yes	6	84	93.3
	Overall Percentage				75.8

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of facilities regulations		
			no	yes	Percentage Correct
Step 1	presence of facilities regulations	no	3	3	50.0
		yes	2	71	97.3
	Overall Percentage				93.7

a. The cut value is .500

F.8-9 Classification tables for the national models without cases from New England states and California (GM vs. Ini/Ref)

Classification Table[a]

Observed		Predicted		
		pop/building cap		
		no	yes	Percentage Correct
Step 1	pop/building cap no	516	0	100.0
	yes	25	0	.0
	Overall Percentage			95.4

a. The cut value is .500

Classification Table[a]

Observed		Predicted		
		presence of voter requirements		
		no	yes	Percentage Correct
Step 1	presence of voter requirements no	525	137	79.3
	yes	304	195	39.1
	Overall Percentage			62.0

a. The cut value is .500

Classification Table[a]

Observed		Predicted		
		Low density zoning		
		no zoning or >=8	<8	Percentage Correct
Step 1	Low density zoning no zoning or >=8	798	78	91.1
	<8	220	134	37.9
	Overall Percentage			75.8

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Mobile Homes/Apartments prohibited (exclusionary zoning)		
			not prohibited	if one or both are prohibited	Percentage Correct
Step 1	Mobile Homes/Apartments prohibited (exclusionary zoning)	not prohibited	385	207	65.0
		if one or both are prohibited	193	486	71.6
	Overall Percentage				68.5

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of urban containment		
			no	yes	Percentage Correct
Step 1	presence of urban containment	no	731	44	94.3
		yes	227	39	14.7
	Overall Percentage				74.0

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of facilities regulations		
			no	yes	Percentage Correct
Step 1	presence of facilities regulations	no	104	181	36.5
		yes	63	552	89.8
	Overall Percentage				72.9

a. The cut value is .500

F.8-10 Classification tables for the Northeast models without cases from New England states (GM vs. Ini/Ref)

Classification Table[a]

Observed		Predicted		
		pop/building cap		
		no	yes	Percentage Correct
Step 1	pop/building cap no	203	0	100.0
	yes	3	0	.0
	Overall Percentage			98.5

a. The cut value is .500

Classification Table[a]

Observed		Predicted		
		presence of voter requirements		
		no	yes	Percentage Correct
Step 1	presence of voter requirements no	22	107	17.1
	yes	15	150	90.9
	Overall Percentage			58.5

a. The cut value is .500

Classification Table[a]

Observed		Predicted		
		Low density zoning		
		no zoning or >=8	<8	Percentage Correct
Step 1	Low density zoning no zoning or >=8	131	43	75.3
	<8	51	92	64.3
	Overall Percentage			70.3

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Mobile Homes/Apartments prohibited (exclusionary zoning)		
			not prohibited	if one or both are prohibited	Percentage Correct
Step 1	Mobile Homes/Apartments prohibited (exclusionary zoning)	not prohibited	44	58	43.1
		if one or both are prohibited	28	187	87.0
	Overall Percentage				72.9

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of urban containment		
			no	yes	Percentage Correct
Step 1	presence of urban containment	no	232	0	100.0
		yes	20	2	9.1
	Overall Percentage				92.1

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of facilities regulations		
			no	yes	Percentage Correct
Step 1	presence of facilities regulations	no	4	30	11.8
		yes	3	127	97.7
	Overall Percentage				79.9

a. The cut value is .500

F.8-11 Classification tables for the Midwest models (GM vs. Ini/Ref)

Classification Table[a]

Observed			Predicted		
			pop/building cap		Percentage Correct
			no	yes	
Step 1	pop/building cap	no	223	1	99.6
		yes	5	1	16.7
	Overall Percentage				97.4

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of voter requirements		Percentage Correct
			no	yes	
Step 1	presence of voter requirements	no	247	47	84.0
		yes	139	77	35.6
	Overall Percentage				63.5

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Low density zoning		Percentage Correct
			no zoning or >=8	<8	
Step 1	Low density zoning	no zoning or >=8	397	27	93.6
		<8	119	50	29.6
	Overall Percentage				75.4

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Mobile Homes/Apartments prohibited (exclusionary zoning)		
			not prohibited	if one or both are prohibited	Percentage Correct
Step 1	Mobile Homes/Apartments prohibited (exclusionary zoning)	not prohibited	145	93	60.9
		if one or both are prohibited	62	273	81.5
	Overall Percentage				72.9

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of urban containment		
			no	yes	Percentage Correct
Step 1	presence of urban containment	no	343	3	99.1
		yes	73	5	6.4
	Overall Percentage				82.1

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of facilities regulations		
			no	yes	Percentage Correct
Step 1	presence of facilities regulations	no	132	64	67.3
		yes	48	211	81.5
	Overall Percentage				75.4

a. The cut value is .500

F.8-12 Classification tables for the South models (GM vs. Ini/Ref)

Classification Table[a]

Observed		Predicted		
		pop/building cap		
		no	yes	Percentage Correct
Step 1	pop/building cap no	42	1	97.7
	yes	4	1	20.0
	Overall Percentage			89.6

a. The cut value is .500

Classification Table[a]

Observed		Predicted		
		presence of voter requirements		
		no	yes	Percentage Correct
Step 1	presence of voter requirements no	157	8	95.2
	yes	73	9	11.0
	Overall Percentage			67.2

a. The cut value is .500

Classification Table[a]

Observed		Predicted		
		Low density zoning		
		no zoning or >=8	<8	Percentage Correct
Step 1	Low density zoning no zoning or >=8	215	1	99.5
	<8	36	2	5.3
	Overall Percentage			85.4

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Mobile Homes/Apartments prohibited (exclusionary zoning)		
			not prohibited	if one or both are prohibited	Percentage Correct
Step 1	Mobile Homes/Apartments prohibited (exclusionary zoning)	not prohibited	132	20	86.8
		if one or both are prohibited	63	41	39.4
	Overall Percentage				67.6

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of urban containment		
			no	yes	Percentage Correct
Step 1	presence of urban containment	no	152	12	92.7
		yes	50	26	34.2
	Overall Percentage				74.2

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of facilities regulations		
			no	yes	Percentage Correct
Step 1	presence of facilities regulations	no	4	45	8.2
		yes	7	146	95.4
	Overall Percentage				74.3

a. The cut value is .500

F.8-13 Classification tables for the West models without cases from California (GM vs. Ini/Ref)

Classification Table[a]

Observed		Predicted		
		pop/building cap		
		no	yes	Percentage Correct
Step 1	pop/building cap no	44	2	95.7
	yes	10	1	9.1
	Overall Percentage			78.9

a. The cut value is .500

Classification Table[a]

Observed		Predicted		
		presence of voter requirements		
		no	yes	Percentage Correct
Step 1	presence of voter requirements no	72	2	97.3
	yes	24	12	33.3
	Overall Percentage			76.4

a. The cut value is .500

Classification Table[a]

Observed		Predicted		
		Low density zoning		
		no zoning or >=8	<8	Percentage Correct
Step 1	Low density zoning no zoning or >=8	62	0	100.0
	<8	2	2	50.0
	Overall Percentage			97.0

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			Mobile Homes/Apartments prohibited (exclusionary zoning)		
			not prohibited	if one or both are prohibited	Percentage Correct
Step 1	Mobile Homes/Apartments prohibited (exclusionary zoning)	not prohibited	98	2	98.0
		if one or both are prohibited	22	3	12.0
	Overall Percentage				80.8

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of urban containment		
			no	yes	Percentage Correct
Step 1	presence of urban containment	no	6	27	18.2
		yes	6	84	93.3
	Overall Percentage				73.2

a. The cut value is .500

Classification Table[a]

Observed			Predicted		
			presence of facilities regulations		
			no	yes	Percentage Correct
Step 1	presence of facilities regulations	no	6	0	100.0
		yes	0	73	100.0
	Overall Percentage				100.0

a. The cut value is .500

Appendix G. Supplementary Information for Westford/Chelmsford

Table G-1. Westford Community Profile

	1990		2000		2010	
	Count	Percent	Count	Percent	Count	Percent
Total population	16,392	100.0	20,754	100.0	21,951	100.0
Household population	16,322	99.6	20,653	99.5	21,940	99.9
White	16,042	97.9	19,444	93.7	18,678	85.1
Asian	270	1.6	994	4.8	2,762	12.6
Median age			36.9		42.0	
Seniors (65+)	1,171	7.1	1,501	7.2	2,178	9.9
Total households	5,316	100.0	6,808	100.0	7,498	100.0
Family households (families)	4,505	84.7	5,806	85.3	6,165	82.2
Family households with own children under 18 years			3,325	48.8	3,395	45.3
Average household size	3.05		3.03		2.93	
Average family size			3.31		3.27	
Median household income (dollars)	60,566		98,272			
Percent below poverty level		1.1		1.3		
Percent high school graduate or higher		90.5		94.1		
Percent bachelor's degree or higher		39.3		56.8		
Employed civilian population 16 years and over	8,974		10,885			
Management, professional, and related occupations	4,010	44.7	6,573	60.4		
Service occupations	757	8.4	840	7.7		
Sales and office occupations	2,739	30.5	2,184	20.1		
Farming, fishing, and forestry occupations	47	0.5	8	0.1		
Construction, extraction, and maintenance occupations	677	7.5	561	5.2		
Production, transportation, and material moving occupations	744	8.3	719	6.6		
Unemployment rate		4.2		1.4		
Mean travel time to work (minutes)	25.0		30.0			
Total housing units	5,530	100.0	6,941	100.0	7,876	100.0
Occupied housing units	5,316	96.1	6,808	98.1	7,498	95.2
Owner-occupied housing units	4,662	84.3	6,258	90.2	6,784	86.1

Data sources: Census 1990, 2000, 2010

Table G-2. Chelmsford Community Profile

	1990		2000		2010	
	Count	Percent	Count	Percent	Count	Percent
Total population	32,375	100	33,858	100.0	33,802	100.0
Household population	32,129	99.2	33,379	98.6	33,672	99.6
White	31,099	96.1	31,520	93.1	29,944	88.6
Asian	956	3.0	1,563	4.6	2,846	8.4
Median age			38.9		43.2	
Seniors (65+)	3,135	9.7	4,418	13.0	5,467	16.2
Total households	11,453	100.0	12,812	100.0	13,313	100.0
Family households (families)	9,011	78.7	9,307	72.6	9,328	70.1
Family households with own children under 18 years			4,403	34.4	4,149	31.2
Average household size	2.81		2.61		2.53	
Average family size			3.11		3.06	
Median household income (dollars)	53,971		70,207			
Percent below poverty level	2.6		1.8			
Percent high school graduate or higher	90.2		93.0			
Percent bachelor's degree or higher	37.7		44.0			
Employed civilian population 16 years and over	18,394		18,167			
Management, professional, and related occupations	7,611	41.4	9,583	52.7		
Service occupations	1,413	7.7	1,872	10.3		
Sales and office occupations	6,354	34.5	4,330	23.8		
Farming, fishing, and forestry occupations	108	0.6	19	0.1		
Construction, extraction, and maintenance occupations	1,595	8.7	1,109	6.1		
Production, transportation, and material moving occupations	1,313	7.1	1,254	6.9		
Unemployment rate	4.1		1.9			
Mean travel time to work (minutes)	23.1		27.6			
Total housing units	11,812	100.0	13,025	100.0	13,807	100.0
Occupied housing units	11,450	96.9	12,812	98.4	13,313	96.4
Owner-occupied housing units	9,413	79.7	10,743	82.5	11,014	79.8

Data sources: Census 1990, 2000, 2010

Table G-3. Westford Growth Rates

	1990	2000	90-00 (%)	2010	00-10 (%)
Total population	16,392	20,754	21.02	21,951	5.45
Household population	16322	20,653	20.97	21,940	5.87
Total housing units	5,530	6,941	20.33	7,876	11.87

Data sources: Census 1990, 2000, 2010

Table G-4. Chelmsford Growth Rates

	1990	2000	90-00 (%)	2010	00-10 (%)
Total population	32375	33,858	4.38	33,802	-0.17
Household population	32129	33,379	3.74	33,672	0.87
Total housing units	11812	13,025	9.31	13,807	5.66

Data sources: Census 1990, 2000, 2010

Appendix H. Sample Interview Questions for Case Studies

Your Information:

- Name:
- Title:
- Phone:
- Date and time:

1. Introduce myself and the project. Read the consent form to the interviewee.
2. Can you introduce your background?
3. Can you briefly give me a description of your community?
4. What is the most concerned issue or significant topic in your town?

[Land use policies]

5. I have conducted a document review and found Westford has several growth management measures. First there is a building permit cap in your zoning. The cap limits 30 units per year but not on affordable housing units. Can you confirm this?
6. In the zoning code I found on your website, the cap will expire on 5/11/2009 but may be extended for additional 5 years. Was it extended? Any changes in its contents?
7. I also noticed the minimum lot size requirement for residential use is at least 20,000 square feet, which is found in the RB district. Can you confirm this?
8. Compared to your neighbors, do you think this minimum lot requirement is low or moderate in terms of density?
9. Mobile home and apartment buildings are not allowed within the Town. Is this true?
10. Do you require a vote from the people on rezoning or annexation issues?
11. I found all above measures in your zoning code. Is zoning the only toolbox you have to manage housing development? Do you have any other tools to manage growth? Such as impact fees collected from the developers for such purposes as school, infrastructure, parks? Or adequate public facilities ordinances to control the timing of housing development? Or a urban growth boundary?
12. I have asked you on the tools you used to regulate housing development. However, those tools are formal, written in your zoning code. At your discretion, do you think there are any informal tools used to control housing development?
13. Put all the measures together and compared to the neighboring jurisdictions, would you say the overall growth management effort in Westford is stringent in limiting housing development?
14. This question is regarding the implementation of the tools. Also at your discretion, would you say the tools are carried out strictly or loosely? Loosely means leaving more flexibility for developers.
15. Have these tools been effective in managing housing development? For example, as a rough estimate, you saw less housing construction activities after the adoption of these tools.

[Policy adoption]

16. Were these measures adopted through town meeting?
17. When were the cap and the low-density zoning first adopted? And when were they last amended?

18. What are the rationales for adopting an annual cap?
19. What are the rationales for such a low-density requirement in the zoning code?
20. Can you describe the housing development situation before these measures were adopted or amended? Was it a rapid development situation or a moderate one? Did the development add pressures on local provision of infrastructure and services? Did it bring negative impacts to the community such as traffic congestion and school overcrowding?
21. According to my information, Westford does not provide public sewer and even public water is also limited. Does this mean the town faces less pressure from housing development in terms of infrastructure provision?
22. Have there been any controversies/conflicts related to the adoption of these tools? Or any stories? Who were active, either supporting or opposing, in the adoption of these tools? Their contact information.
23. What was the board of selectmen's stand in above issues? Pro-growth or anti-growth? Do the members have conflicts? What were the arguments?
24. Is there a mechanism through which the government can communicate with the people on its stand?
25. Usually how many people attend town meeting?
26. Are the attendants different from those who do not attend, in terms of age, income, education, or length of residence?
27. What are the reasons for people not attending town meeting?
28. What was the attendants' attitude in above issues? Pro-growth or anti-growth? Can you give me some names?
29. Any interest groups or businesses, either supporting or opposing, were involved in the Town's policy adoption process? Who are they? Contact information.
30. Do you think the tools used in your neighboring communities would encourage or discourage your adoption of certain tools?
31. In your opinion, why were the cap and the low-density zoning adopted or amended?
32. Were there any measures proposed but later defeated or did not pass? Can you talk more on them?
33. I want to learn more on the stories related to the adoption of the policy tools. Can you recommend some people to me?

[Affordable housing and exclusion]

34. In your town's housing stock, what is the share (%) of affordable housing? Is this number above or bellow regional composition of affordable housing?
35. Any efforts have been employed to promote or limit affordable housing construction?
36. Why are the market or the developers reluctant to develop affordable housing units?
37. Why does the Town not allow mobile home and apartment construction? Do you know what are the government's concerns on this issue and what are the residents' concerns?

[Budget]

38. In general, other than property taxes, are there any other revenue sources for Westford? Any other taxes or aid from the state?
39. Currently, are there any constraints on the Town's revenue or budget?
40. How much is the share in the Towns' budget for Town employees' direct expenses including salaries, health insurance, retirement, and the similar?

41. What public services and infrastructures does the Town currently provide? Can you rate them based on their share in budget?
42. Has Westford ever reached tax levy limit in terms of balanced budget?
43. Has the Town ever relied on housing development to offset infrastructure or public service expenditure?
44. Do the residents know above information? Through what channels?

[Free opinion]

45. These are all my questions. Now you can make your opinion on these issues including the stringency of growth management measures, their adoption process, affordable housing provision, and town budget issues.

References

Articles, Books, and Reports

Abbott, C., Howe, D., and Adler, S. (1994). *Planning the Oregon Way: A Twenty-Year Evaluation*. Corvallis, OR: Oregon State University Press.

Albrecht, D. E., Bultena, G. L., and Hoilberg, E. O. (1986). Constituency of the Antigrowth Movement - A Comparison of the Growth Orientations of Urban Status Groups. *Urban Affairs Quarterly, 21*(4), 607-616.

Alexander, J. W., and Berger, M. (1949). Is the Town Meeting Finished? *The American Mercury, August*.

Altshuler, A. A., Gomez-Ibanez, J. A., and Howitt, A. M. (1993). *Regulation for Revenue: The Political Economy of Land Use Exactions*. Washington, DC: Brookings Institution Press.

Bachrach, P., and Baratz, M. S. (1962). Two Faces of Power. *The American Political Science Review, 56*(4), 947-952.

Baldassare, M. (1981). *The Growth Dilemma: Residents' Views and Local Population Change in the United States*. Berkeley, CA: University of California Press.

Baldassare, M. (1984). Predicting Local Concern About Growth: The Roots of Citizen Discontent. *Journal of Urban Affairs, 6*(4), 39-49.

Baldassare, M. (1985). The Suburban Movement to Limit Growth: Reasons for Support in Orange County. *Policy Studies Review, 4*(4), 613-625.

Baldassare, M. (2001). *PPIC Statewide Survey: Special Survey on Growth.* San Francisco, CA: Public Policy Institute of California.

Baldassare, M., and Protash, W. (1982). Growth Controls, Population Growth and Community Satisfaction. *American Sociological Review, 47*, 339-346.

Baldassare, M., and Wilson, G. (1996). Changing Sources of Suburban Support for Local Growth Controls. *Urban Studies, 33*(3), 459-471.

Barnett, J. (1915). *The Operation of the Initiative, Referendum and Recall in Oregon*. New York, NY: Macmillan.

Bassett, J. N. (Ed.). (1929). *City Planning*. New York, NY: Appleton and Company.

Bollens, S. A. (1990). Constituencies for Limitation and Regionalism: Approaches to Growth Management. *Urban Affairs Quarterly, 26*, 46-67.

Bollens, S. A. (1992). State Growth Management - Intergovernmental Frameworks and Policy Objectives. *Journal of the American Planning Association, 58*(4), 454-466.

Bosselman, F., and Callies, D. (1972). *The Quiet Revolution in Land Use Control*. Washington, DC: Council on Environmental Quality.

Brower, D. J., et al. (1984). *Managing Development in Small Towns.* Chicago, IL: APA Planners Press.

Brueckner, J. K. (1998). Testing for Strategic Interaction Among Local Governments: The Case of Growth Controls. *Journal of Urban Economics, 44*(3), 438-467.

Bryan, F. (2004). *Real Democracy: The New England Town Meeting and How It Works*. Chicago, IL: University of Chicago Press.

Buchanan, J. (1971). Principles of Urban Fiscal Strategy. *Public Choice, 11*, 1-14.

Buck, P. L. (1980). Eastlake vs. Forest City Enterprise: a Comment. In F. Schnidman, and J. Silverman (Ed.), *Management and Control of Growth: Updating the Law*. Washington DC: The Urban Land Institute.

Burbank, M. J., Heying, C. H., and Andranovich, G. (2000). Antigrowth Politics or Piecemeal Resistance? Citizen Opposition to Olympic-related Economic Growth. *Urban Affairs Review*, 35(3), 334–357.

Burke, M. A. (2009). The Emperor's New Clothes: Exposing the Failures of Regulating Land Use Through the Ballot Box. *Notre Dame Law Review, 84*(4), 1453-1528.

Burrows, L. B. (1978). *Growth Management.* New Brunswick, NJ: Rutgers University.

Calavita, N. (1992). Growth Machine and Ballot Box Planning: The San Diego Case. *Journal of Urban Affairs, 14*, 1-24.

Callies, D., and Curtin, D. J. (1990). On the Making of Land Use Decisions through Citizen Initiative and Referendum. . *Journal of the American Planning Association, 56*(Spring), 222-223.

Caves, R. W. (1992). *Land Use Planning: The Ballot Box Revolution*. Newbury Park, CA: Sage Publications.

Collins, R. C., Dotson, B., and Waters, E. (1985). *Not-In-My-Backyard!: Community Reaction to Locally Unwanted Land Use.* Paper presented at the Conference on Siting Locally Unwanted Land Uses, Charlottesville, VA.

Connerly, C. E., and Frank, J. E. (1986). Predicting Support for Local Growth Controls. *Social Science Quarterly, 67*, 572-585.

Cronin, T. E. (1980). Initiative and Referendum: the Pros and Cons of Popular Initiatives. In F. Schnidman, and J. Silverman (Ed.), *Management and Control of Growth: Updating the Law*. Washington DC: The Urban Land Institute.

Cruz, E. E. R. d. l. (2009). Local Political Institutions and Smart Growth: An Empirical Study of the Politics of Compact Development. *Urban Affairs Review, 45*(2), 218-246.

Curtin, D. J., Jr. and Jacobson, M. T. (1989). Growth Management by the Initiative in California: Legal and Practical Issues. *The Urban Lawyer, 21*, 491-510.

Dahl, R. A. (1961). *Who Governs? Democracy and Power in an American City*. New Haven, CT: Yale University Press.

Danielson, M. (1976). *The Politics of Exclusion*. New York, NY: Columbia University Press.

Deakin, E. (1989). Growth Controls and Growth Management: A Summary and Review of Empirical Research. In D. Brower, D. Godschalk, and D. R. Porter (Ed.), *Understanding Growth Management: Critical Issues and a Research Agenda*. Washington, DC: Urban Land Institute.

DeGrove, J. M. (1984). *Land Growth and Politics.* Chicago, IL: Planners Press.

DeGrove, J. M. (1989). Growth Management and Governance. In D. J. Brower, D. R. Godschalk, and D. R. Porter (Ed.), *Understanding Growth Management: Critical Issues and a Research Agenda.* Washington, DC: Urban Land Institute.

DeGrove, J. M. (Ed.). (1991). *Balanced Growth: A Planning Guide for Local Government*. Washington, DC: International City/County Management Association.

DeGrove, J. M. (1992). *Planning and Growth Management.* Cambridge, MA: Lincoln Institute of Land Policy.

Deleon, R. E., and Powell, S. S. (1989). Growth Control and Electoral Politics: The Triumph of Urban Populism in San Francisco. *The Western Politics Quarterly, 42*(2), 307-331.

Dillemuth, A. (2006). *The Community Preservation Act and Affordable Housing in Massachusetts: Learning from the First Five Years*. Boston, MA: Massachusetts Housing Partnership.

Domhoff, G. W. (1978). *Who Really Rules? New Haven and Community Power Reexamined*. New Brunswick, NJ: Transaction Books.

Donovan, T., and Neiman, M. (1992). Citizen Mobilization and the Adoption of Local Growth Control. *The Western Political Quarterly, 45*(3), 651-675.

Donovan, T., and Neiman, M. (1995). Local Growth-Control Policy and Changes in Community Characteristics. *Social Science Quarterly, 76*(4), 780-793.

Dowall, D. E. (1980). Effects of Land Use and Environmental Regulations on Housing Costs. *Policy Studies Journal, 8*(2), 277-288.

Dowall, D. E. (1986). Planners and Office Overbuilding. *Journal of the American Planning Association, 52*(2), 131-132.

Dowall, D., and Landis, J. (1982). Land Use Controls and Housing Costs: An Examination of San Francisco Bay Area Communities. *AREUEA Journal, 10*, 67-92.

Downs, A. (1957). *An Economic Theory of Democracy*. New York, NY: Harper and Row.

Engle, R. P., Navarro, P., and Carson, R. (1992). On the Theory of Growth Controls. *Journal of Urban Economics, 32*, 269-283.

Fischel, W. A. (1987). *The Economics of Zoning Laws: A Property Rights Approach to American Land Use Controls*. Baltimore, MD: The Johns Hopkins University Press.

Fischel, W. A. (1990). *Do Growth Controls Matter?* Cambridge, MA: Lincoln Institute of Land Policy.

Fischel, W. A. (1999). Does the American Way of Zoning Cause the Suburbs of U.S. Metropolitan Areas to Be Too Spread Out? In A. Altshuler, W. Morrill, H. Wolman, and F. Mitchell (Ed.), *Governance and Opportunity in Metropolitan Areas*. Washington, DC: National Academy Press.

Fischel, W. A. (2005). Politics in a Dynamic View of Land-Use Regulations: of Interest Groups and Homevoters. *The Journal of Real Estate Finance and Economics, 31*(4), 397-403.

Fountaine, C. L. (1988). Lousy Lawmaking: Questioning the Desirability and Constitutionality of Legislating by Initiative. *Southern California Law Review, 61*, 733-736.

Frech, H. E., III, and Lafferty, R. N. (1984). The Effect of the California Coastal Commission on Housing Prices. *Journal of Urban Economics, 16*, 105-123.

Frey, W. H. (2001). *Melting Pot Suburbs: A Census 2000 Study of Suburban Diversity*. Washington, DC: The Brookings Institution.

Frieden, B. (1979). *The Environmental Protection Hustle*. Cambridge, MA: MIT Press.

Frug, G. E., and Barron, D. J. (2008). *City Bound: How States Stifle Urban Innovation*. Ithaca, NY: Cornell University Press.

Gale, D. E. (1992). Eight State-Sponsored Growth Management Programs - A Comparative Analysis. *Journal of the American Planning Association, 58*(4), 452-439.

Gale, D. E., and Hart, S. (1992). Public Support for Local Comprehensive Planning Under Statewide Growth Management: Insights From Maine. *Journal of Planning Education and Research, 11*, 192-205.

Gerber, E. R. (1991). *Legislative Politics and the Direct Ballot: Comparing Policy Outcomes Across Institutional Arrangements.* Doctoral Dissertation. Ann Arbor, MI: University of Michigan.

Gerber, E. R., and Phillips, J. H. (2004). Direct Democracy and Land Use Policy: Exchanging Public Goods for Development Rights. *Urban Studies, 41*(2), 463-479.

Gerber, E. R., and Phillips, J. H. (2005). Evaluating the Effects of Direct Democracy on Public Policy - California's Urban Growth Boundaries. *American Politics Research, 33*(2), 310-330.

Glaeser, E. (2011). *If We Build It, They Will Come*. Retrieved May 25, 2011, from http://articles.boston.com/2011-01-23/realestate/29347798_1_population-growth-housing-prices-capita-personal-income

Glickfeld, M., and Levine, N. (1992). *Regional Growth...Local Reaction: The Enactment of Effects of Local Growth Control Measures in California*. Cambridge, MA: Lincoln Institute of Land Policy.

Godschalk, D. R. (2004). Land Use Planning Challenges. *Journal of the American Planning Association, 70*(1), 5-13.

Godschalk, D. R., Brower, D. J., and McBennett, V. (1979). *Constitutional Issues of Growth Management.* Chicago: APA Planners Press.

Gottdiener, M., and Neiman, M. (1981). Characteristics of Support for Local Growth Control. *Urban Affairs Quarterly, 17*(1), 55-73.

Gross, S. J. (1996). Creating a Learner's Bill of Rights--Vermont's Town Meeting Approach. *Educational Leadership, 53*(7), 50-53.

Hales, P. B. (2004). *Levittown: Documents of an Ideal American Suburb*. Retrieved March 12, 2005, from http://tigger.uic.edu/~pbhales/Levittown.html

Henig, J. R. (1982). *Neighborhood Mobilization: Redevelopment and Response*. Piscataway, NJ: Rutgers University Press.

Hoben, J. (2001). My 30 Years at HUD. *Planning, 67*(8), 62.

Hoch, C. J., Dalton, L. C., and So, F. S. (2000). *The Practice of Local Government Planning*. Washington, DC: International City/County Management Association.

The Housing Affordability Initiative. (2006). *Large-Lot Housing Construction in the Greater Boston Metropolitan Area*. Boston, MA: MIT Center for Real Estate.

Horton, J. (1998). The Chinese Suburban Immigration and Political Diversity in Monterey Park, California. In S. Jonas and S. D. Thomas (Ed.), *Immigration: A Civil Rights Issue for the Americas*. Wilmington, DE: SR Books.

Howell-Moroney, M. (2004). What Are the Determinants of Open-space Ballot Measures? *Social Science Quarterly*, 85(1), 169–179.

Hughes, M. A., and Vandoren, P. M. (1990). Social Policy through Land Reform: New Jersey's Mount Laurel Controversy. *Political Science Quarterly, 105*(1), 97-111.

Hunter, F. (1953). *Community Power Structure: A Study of Decision Makers*. Chapel Hill, NC: University of North Carolina Press.

Innes, J. E. (1992). Group Processes and the Social Construction of Growth Management - Florida, Vermont, and New Jersey. *Journal of the American Planning Association, 58*(4), 440-453.

Jackson, J. E. (1990). Institutions in American Society: An Overview. In J. E. Jackson (Ed.), *Institutions in American Society*. Ann Arbor, MI: University of Michigan Press.

Jackson, K. (1985). *Crabgrass Frontier: The Suburbanization of the United States*. New York, NY: Oxford University Press.

Jones-Correa, M. (Ed.). (2001). *Governing American Cities: Inter-Ethnic Coalitions, Competition, and Conflict*. New York, NY: Russell Sage Foundation.

Katz, L., and Rosen, K. T. (1987). The Interjurisdictional Effects of Growth Controls on Housing Prices. *Journal of Law and Economics, 30*(April), 149-160.

Keefe, W. J., and Ogul, M. S. (1964). *The American Legislative Process: Congress and the States*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Kling, R., Olin, S., and Poster, M. (Ed.). (1991). *Postsuburban California: the Transformation of Orange County Since World War II*. Berkeley and Los Angeles, CA: University of California Press.

Knaap, G. J. (1985). The Price Effects of Urban Growth Boundaries in Metropolitan Portland, Oregon. *Land Economics, 61*(1), 28-35.

Knaap, G. J. (1987). Self-Interest and Voter Support for Oregon's Land Use Controls. *Journal of the American Planning Association, 53*, 92-97.

Knaap, G., Smith, L., and Johnsen, P. (1997). Public Support for Remedial Action Planning: Willingness to Pay in Brown County, Wisconsin. *Journal of Planning Education and Research, 16*(4), 257-269.

Kunstler, J. H. (1998). *Home from Nowhere: Remaking Our Everyday World for the 21st Century*. Oneonta, NY: Touchstone Press.

Landis, J. D. (1992). Do Growth Controls Work? A New Assessment. *Journal of the American Planning Association, 58*, 489-508.

Landis, J. D. (2006). Growth Management Revisited. *Journal of the American Planning Association, 72*(4), 411-430.

Landis, J. D., Deng, L., and Reilly, M. (2002). *Growth Management Revisited: A Reassessment of its Efficacy, Price Effects and Impacts on Metropolitan Growth Patterns.* Berkeley, CA: University of California at Berkeley.

Lee, D. B. (1981). Market Failure. In J. Neufville (Ed.), *The Land Use Policy Debate in the United States.* New York, NY: Plenum Publishers.

Leonard, J. H. (1983). *Managing Oregon's Growth.* Washington, DC: Conservation Foundation.

Nelson, A. C., and Duncan, J. B. (1995). *Growth Management Principles and Practices*. Chicago, IL: The American Planning Association.

Nguyen, M. T. (2009). Why do Communities Mobilize Against Growth: Growth Pressures, Community Status, Metropolitan Hierarchy, or Strategic Interaction? *Journal of Urban Affairs, 31*(1), 25-43.

Levine, N. (1999). The Effect of Local Growth Controls on Regional Housing Production and Population Redistribution in California. *Urban Studies, 36*(12), 2047-2068.

Logan, J. R., and Zhou, M. (1989). Do Suburban Growth Controls Control Growth? *American Sociological Review, 54*(June), 461-471.

Logan, J. R., and Zhou, M. (1990). The Adoption of Growth Controls in Suburban Communities. *Social Science Quarterly, 71*(1), 118-129.

Logan, J. R., and Molotch, H. L. (1987). *Urban Fortunes: The Political Economy of Place*. Berkeley, CA: University of California Press.

Lucero, L. A. (2003). Ballot-Box Zoning: Good Planning or Vigilantism? *Zoning News, 2003*(May), 1-6.

Magleby, D. B. (1984). *Direct Legislation: Voting on Ballot Propositions in the United States*. Baltimore, MD: The Johns Hopkins University Press.

Magleby, D. B. (1988). Taking the Initiative: Direct Legislation and Direct Democracy in the 1980s. *Political Science and Politics, 21*, 600-611.

Mansbridge, J. J. (1976). Conflict in a New England Town Meeting. *The Massachusetts Review, 17*(4), 631-663.

March, J. G., and Olsen, J. P. (1984). The New Institutionalism: Organizational Factors in Political Life. *American Political Science Review, 78*, 734-749.

Mayer, C. J., and Somerville, C. T. (2000). Land Use Regulation and New Construction. *Regional Science and Urban Economics, 30*(6), 639-662.

McClendon, B. W. (1990). An Alternative Proposal. *Journal of the American Planning Association, 56*(Spring), 223-225.

Mercer, L. J., and Morgan, W. D. (1982). An Estimate of Residential Growth Controls' Impact on House Prices. In M. B. Johnson (Ed.), *Resolving the Housing Crisis: Government Policy,*

Decontrol, and the Public Interest. San Francisco, CA: Pacific Institute for Public Policy Research.

Molotch, H. (1976). The City as a Growth Machine: Toward a Political Economy of Place. *The American Journal of Sociology, 82*(2), 309-332.

Molotch, H. (1988). Strategies and Constraints of Growth Elites. In S. Cummings (Ed.), *Business Elites and Urban Development: Case Studies and Critical Perspectives*. Albany, NY: State University of New York Press.

Myers, P. (1999). *Livability at the Ballot Box: State and Local Referenda on Parks, Conservation, and Smarter Growth, Election Day 1998*. Washington DC: The Brookings Institution Center on Urban and Metropolitan Policy.

Myers, P. (2008). *Direct Democracy and Land Use: Eminent Domain and Big Box Development at the Local Ballot Box*. Los Angeles, CA: The USC-Caltech Center for the Study of Law and Politics and the Initiative and Referendum Institute.

Myers, P., and Puentes, R. (2001). *Growth at the Ballot Box: Electing the Shape of Communities in November 2000*. Washington DC: The Brookings Institution Center on Urban and Metropolitan Policy.

Nelson, A. C., and Duncan, J. B. (1995). *Growth Management Principles and Practices*. Chicago, IL: The American Planning Association.

Nguyen, M. T. (2007). Local Growth Control at the Ballot Box: Real Effects or Symbolic Politics? *Journal of Urban Affairs, 29*(2), 129-147.

Nguyen, M. T. (2009). Why do Communities Mobilize Against Growth: Growth Pressures, Community Status, Metropolitan Hierarchy, or Strategic Interaction? *Journal of Urban Affairs, 31*(1), 25-43.

Pendall, R. J. (1995). *Residential Growth Controls and Racial and Ethnic Diversity: Making and Breaking the Chain of Exclusion.* Doctoral Dissertation. Berkeley, CA: UC Berkeley.

Pendall, R. J. (2000). Local Land Use Regulation and the Chain of Exclusion. *Journal of the American Planning Association, 66*(2), 125-142.

Pendall, R. J. (2001). Municipal Plans, State Mandates, and Property Rights - Lessons from Maine. *Journal of Planning Education and Research, 21*(2), 154-165.

Pendall, R. J., Martin, J., and Fulton, W. (2002). *Holding the Line: Urban Containment in the United States.* Washington, DC: The Brookings Institution Center on Urban and Metropolitan Policy.

Pendall, R. J., Puentes, R., and Martin, J. (2006). *From Traditional to Reformed: A Review of the Land Use Regulations in the Nation's 50 Largest Metropolitan Areas*. Washington, DC: The Brookings Institution Center on Urban and Metropolitan Policy.

Peterson, P. E. (1981). *City Limits*. Chicago, IL: University of Chicago Press.

Protash, W., and Baldassare, M. (1983). Growth Policies and Community Status: A Test and Modification of Logan's Theory. *Urban Affairs Quarterly, 18*(3), 397-412.

Reps, J. (1965). *The Making of Urban America*. Princeton, NJ: Princeton University Press.

Riker, W. H. (1980). Implications from the Disequilibrium of Majority Rule for the Study of Institutions. *American Political Science Review, 74*, 432-446.

Romero, F. S., and Lisero, A. (2002). Saving Open Spaces: Determinants of 1998 and 1999 "Antisprawl" Ballot Measures. *Social Science Quarterly*, 83(1), 341–352.

Rothmel, B. (2006). Deep Freeze: Thawing Rate of Development Growth Quotas After Zuckerman v. Town of Hadley. *Journal of Law & Policy, 20*, 375-401.

Schmidley, A. D., and Gibson, C. (1999). *Profile of the Foreign Born Population in the United States, 1997*. Washington, DC: U.S. Government Printing Office.

Schneider, M. (1989). *The Competitive City: The Political Economy of Suburbia*. Pittsburgh, PA: University of Pittsburgh Press.

Schuetz, J. (2008). Guarding the Town Walls: Mechanisms and Motives for Restricting Multifamily Housing in Massachusetts. *Real Estate Economics, 36*(3), 555-586.

Schwartz, S. I., and Zorn, P. M. (1988). A Critique of Quasiexperimental and Statistical Controls for Measuring Program Effects: Application to Urban Growth Control. *Journal of Policy Analysis and Management, 7*(3), 491-505.

Selmi, D. P. (2001-2002). Reconsidering the Use of Direct Democracy in Making Land Use Decisions. *UCLA Journal of Environmental Law, 19*, 293-357.

Settle, R. L. (1983). *Washington Land Use and Environmental Law and Practice*. London, UK: Butterworth Legal Publishers.

Smutny, G. (1998). Legislative Support for Growth Management in the Rocky Mountains - An Exploration of Attitudes in Idaho. *Journal of the American Planning Association, 64*(3), 311-323.

Staley, S. R. (2001). Ballot-Box Zoning, Transaction Costs, and Urban Growth. *Journal of the American Planning Association, 67*(1), 25-37.

Stoker, G. (1995). Regime Theory and Urban Politics. In D. Judge, G. Stocker, and H. Wolman (Ed.), *Theories of Urban politics*. London, UK: SAGE Publications.

Stone, C. N. (1989). *Regime Politics: Governing Atlanta, 1946-1988*. Lawrence, KS: University Press of Kansas.

Stone, C. N. (2003). Power and Governance in American Cities. In J. Pelissero (Ed.), *Cities, Politics, and Policy: A Comparative Analysis*. Washington, DC: CQ Press.

Tiebout, C. M. (1956). A Pure Theory of Local Expenditures. *The Journal of Political Economy, 64*(5), 416-424.

Warner, K., and Molotch, H. (2000). *Building Rules: How Local Controls Shape Community Environments and Economies*. Boulder, CO: Westview Press.

Waters, M. D. (Ed.). (2001). *The Battle Over Citizen Lawmaking*. Durham, NC: Carolina Academic Press.

Weinberg, P. J. (2002). The Greenlight Initiative and Ballot Box Zoning: California Tea Party and Harbinger of Things to Come? *Zoning and Planning Law Report, 25*(3).

Weitz, J. (1999). *Sprawl Busting: State Programs to Guide Growth*. Chicago, IL: Planners Press, APA.

Wood, R. C. (1958). Metropolitan Government 1975: An Extrapolation of Trends. *American Political Science Review, 52*(1), 108-122.

Yin, R. K. (2002). *Case Study Research: Design and Methods* (3rd edition). Thousand Oaks, CA: Sage Publications, Inc.

Zimmerman, J. F. (1999). *The New England Town Meeting: Democracy in Action.* Westport, CT: Praeger Publishers.

Zorn, P. M., Hansen, D. E., and Schwartz, S. I. (1986). Mitigating the Price Effects of Growth Control: A Case Study of Davis, California. *Land Economics, 62*(1), 46-57.

Zovanyi, G. (1992). Court Rulings on Local Efforts to Manage Growth by Initiative and Referendum in California. *Land Use Policy, 1*, 11-20.

Statutes and Rulings

Associated Home Builders v. City of Livermore, 557 P.2d 473 (Cal. 1976).

Construction Industry Association of Sonoma County v. City of Petaluma, 522 F.2d 897 (1975).

Golden v. Planning Board of Ramapo, 30 N.Y. 2d 359 (1972).

Massachusetts General Laws Chapter 40A § 5: The Zoning Act.

Massachusetts General Laws Chapter 40B § 20-23: Anti-Snob Zoning Law

Massachusetts General Laws Chapter 43 § 37, 39, 42: City Charters on Initiative and Referendum.

Massachusetts General Laws Chapter 44B § 1-17: Community Preservation Act.

Massachusetts General Laws Chapter 59 § 21: Proposition 2½.

Southern Burlington County N.A.A.C.P. v. Township of Mount Laurel, 67 N.J. 151 (1975).

Southern Burlington County N.A.A.C.P. v. Township of Mount Laurel, 456 A.2d 390 (1983).

Sturges v. Town of Chilmark, 402 N.E.2d 1346 (Mass. 1980).

Village of Euclid, Ohio v. Ambler Realty Co., 272 U.S. 365, 47 S. Ct. 114, 71 L. Ed. 303 (1926).

Zuckerman v. Town of Hadley, 813 N.E.2d 843 (Mass. 2004).

Town of Westford, MA:

Town Charter (1989).

General Bylaws (2010).

Comprehensive Plan (2009).

Zoning Bylaw (2010).

Subdivision Rules and Regulations (2004).

Town of Chelmsford, MA:

Town Charter (1989).

General Bylaws (1992).

Master Plan (2010).

Zoning Bylaw (1998).

Subdivision Control (1997).

Site Plan and Special Permit Regulations and Procedures (2009).